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1859 Sess. I
XXI. Pt. II
[2502]

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SIXTH REPORT

OF THE

SCIENCE AND ART DEPARTMENT

OF THE

COMMITTEE OF COUNCIL ON EDUCATION.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1859.

COMMITTEE OF COUNCIL ON EDUCATION

SCIENCE AND ART DEPARTMENT

SIXTH REPORT

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SIXTH REPORT

OF THE

SCIENCE AND ART DEPARTMENT

OF THE

COMMITTEE OF COUNCIL ON EDUCATION.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

WE humbly present to Your Majesty this our Report of the proceedings of the Science and Art Department, for the year 1858.

The Report is arranged under the following heads :—

I.—The several Metropolitan Institutions for promoting Science, under the general superintendence of the Department.

II.—The various kinds of aid afforded to Schools of Art, Science, and Navigation; and to Mechanics' and other local Institutions in obtaining examples, diagrams, and apparatus, at a reduced cost.

III.—The direction of a Training School for Art-teachers at South Kensington.

IV.—The direction and management of the Museum at South Kensington and a Circulating Art-Library.

I.—METROPOLITAN INSTITUTIONS.

GEOLOGICAL SURVEY OF THE UNITED KINGDOM.

(*See* Appendix A., p. 43.)

1. The progress made during the past year in all the branches of the survey is detailed in the Report of the Director General, which is printed entire in the Appendix. The number of square miles surveyed in Great Britain in that period has been 2,326, while in 1857 the area was 2,605;

the reduction having been owing to an accidentally smaller staff. Maps on a scale of one inch to the mile, covering about 1,238 square miles, have been issued during the year; and six sheets of a map on a scale of four inches to the mile have also been published.

2. In Ireland the work of the Survey has been chiefly directed to preparing for publication the one-inch maps of that country. Of these, 23 new sheets have been issued during the year, making a total of 44 sheets that have been published. The Director-General reports that he has prepared small explanatory pamphlets for the new sheets.

3. In the *Natural History* Branch of the Survey, Professor Huxley has re-arranged and re-labelled the Museum collections, while 3,500 secondary and tertiary specimens have been placed in the cases.

4. In the *Palæontological* section, Mr. Salter has named, in the same period, 4,887 specimens (of which 503 are foreign), and placed 2,000 in the museum-cases.

The Museum of Practical Geology.

5. This Museum has been visited by 24,877 persons during the year 1858, being an increase of upwards of 7,000 on those of the preceding year.

Mining Record Office.

6. 173 documents have been added to this office, being an increase of 11 on the number added in 1857. The Director-General reports on the continued and increasing importance of the Mining Record Office to all persons connected with mining and metal-working. The statistics of minerals and metals, the produce of Great Britain in 1854–6, prepared by Mr. Hunt, have been printed in the miscellaneous statistics of the Board of Trade.

Government School of Mines.

7. During the last year, 12 matriculated students attended this school, the average of the eight years 1851-8 (both inclusive) being 14; while the occasional students have been 50, as compared with an average of 51. These numbers are exclusive of the laboratory students, who have been 94 in the chemical and 17 in the metallurgical laboratory, against 116 and 21 respectively in the previous year

8. Details of the several *lectures* given in the theatre of this institution are printed in the Appendix (A.)

9. Among the several kinds of assistance officially afforded to other Departments of Government may be instanced scientific investigations by Dr. Hofmann into bituminous matter in certain shales, into the various copper wires used by the Transatlantic Telegraph Company, and also into a method of bleaching resins for soap-boiling. Dr. Percy has analysed specimens of coal from the Straits of Magellan for the Board of Admiralty. At the request of the Secretary of State for the Colonies, Mr. Charles Gould, a pupil of the School of Mines, has been recommended as geological surveyor of Tasmania, and appointed to that office. At the request of the Secretary of State for India, reports have been originated on the value of soils in Madras, and the graphite of Travancore. And to the Secretary of State for Foreign Affairs a memorandum has been addressed, regarding artesian wells in Tripoli.

Museum of Irish Industry.

(*See* Appendix B., p. 65.)

10. The detailed report of the Director of this institution is printed in the Appendix (B.), with lists of the objects acquired during the past year. It has been visited during this period by 23,638 persons, in the short hours in the daytime, during which it is open (namely, 11 till 4), thus showing an increase on the visitors of 1857, who numbered 19,774. The evening attendance has been, on the nights of lectures, from 7 till 9 o'clock, 9,523, as compared with 8,651 in 1857. The galleries have also been open on two other evenings in the week, from 7 till half-past 9, irrespective of lectures, in compliance with a suggestion made in our report of last year. The attendance on these nights, which commenced on October 11th, has been 180, an unusually small number compared with the success attending similar experiments in London and elsewhere. The total number of visitors have been 33,341 ; in 1857 they were 31,611.

11. The details of the progress made in the chemical laboratory and of the attendance at the several courses of lectures, together with the work done in the arranging and cataloguing of the Museum collections, are given in the Director's report (Appendix B.)

Royal Dublin Society.

(*See* Appendix C., p. 75.)

12. This Society (the report of which is printed in the Appendix) has received its usual annual subsidy of 6,000*l*. It has continued the system of examinations of adults who aim to show their competence in mercantile

knowledge, which was commenced in 1857. An increase is shown in the number of the candidates, these having been 42, or more than double the number who presented themselves in the previous year, while 12 have received rewards of merit. The Society is endeavouring to extend its sphere of operations by adopting a system of affiliation somewhat similar to that of the Society of Arts, by which Dublin and provincial societies may enter into connexion with the Royal Dublin Society on terms of mutual advantage. It is in contemplation to organize a system of competitive examinations among the students of these affiliated societies.

13. The summary of the *lectures* delivered in the theatre of the Society in 1858 is as follows:—10 lectures by Prof. Harvey on Economic Botany, which have been attended by an average of 52 persons at each lecture; 10 lectures, by the same Professor, on Structural and Systematic Botany, with an average attendance of 63 persons; and 10 lectures delivered in the Botanic Garden, with an average attendance of 50; Dr. Kinahan's course of 18 lectures, attended by an average of 139 at each lecture; Prof. Jukes' course of 12 lectures on Geology, with an average of 202 attending at each lecture; Dr. Sullivan's course of 12 lectures on Chemistry, with an average of 152; and Dr. Barber's 20 lectures on Physical Science, attended by an average of 195, and his second course of 12 lectures, attended by an average of 202 at each lecture.

14. The Society reports that in consequence of the death of Dr. Davy, the lectures usually given on Agricultural Chemistry, and the laboratory instruction in the same science, have been suspended; but that they will shortly be resumed by Dr. E. W. Davy, who has been elected to the professorship.

15. The *Botanic Gardens* are reported to have been visited by 39,853 persons during 1858, being a slight decrease on the numbers of the preceding year, although the Gardens have been opened in this period on the Saturday half-holiday in each week. In our report of last year, the suggestion was made that a reduction in the 6*d.* charge for admission on certain days in the week would in all probability increase the attendance, and be a measure that would be viewed with approbation, but the suggestion does not appear to have been adopted. This department of the Society continues to exchange specimens, &c., with other public bodies, such as the Botanic Garden at Glasgow; the Queen's College, Cork; and the Royal Botanic Garden, Kew.

16. The *Museum of Natural History* has been open for four months only, in consequence of the new galleries, to which the collections had been partially transferred, having been granted for the use of the Art Exhibition connected with the Circulating Museum collection belonging to this Department. The arrangement of the specimens has been further retarded by the damp condition of the galleries. The number of visitors in the four months has been 8,968; which would give a higher average than that of the previous year. An extra grant of 800*l.* has been made to the Museum for cases, &c.

17. The state of the Museum of Natural History prejudices the *Library*, the former occupying for the present the rooms intended for the accommodation of the latter. The Society's report gives the same numbers attending the Library for the past year as were returned for the year 1857. These numbers therefore show a continued decline in the attendance at the Library. They are exclusive of members of the Society and of persons consulting Parliamentary papers, &c. The time appears to have arrived when the Society should be called upon to open the Library either free or at a nominal subscription for the privilege of using it in the evening, reserving the morning only for the use of members of the Society.

18. For the *Spring Cattle Show*, which was held in the building newly erected for the purpose, 1,681 entries were made of animals and implements; 179*l.* were awarded in prizes, and 73 medals, with 18 certificates, given. The attendance of visitors at the Exhibition amounted to 10,565. In the *Winter Show*, which was attended by 1,594 persons, the entries and awards were as follows:—Farm produce and live stock, 1,052; money awards, 76*l.* 10*s.*; medals, 26; and certificates, 15. The statistics of these shows exhibit a favourable advance on those of preceding exhibitions.

The Society reports that the *Agricultural Museum* has been closed in consequence of the erection of the hall for the Agricultural Shows, and that at present the funds at their disposal do not enable them to re-open it.

19. The results of the year's work in the School of Art are detailed in Appendix H., with those of the provincial schools of the Department. The Society, it may be mentioned, reports on its continued prosperity. A course of twelve lectures on Anatomy bearing on Art has been delivered by Mr. R. D. Lyons, attended by an average of 42 persons at each lecture. In connexion with the Art School, the exhibition of the Circulating Museum collection of the

Department has been held. The success which attended it, promoted by the efforts of the Royal Dublin Society, has been very decided; the local contributions amounted to 3,147 in number; the receipts for admission and sale of catalogues were 1,072*l.* 2*s.* 8*d.*; and in the sixty-six days during which the exhibition was open, it was visited by 55,318 persons. The Society opened the exhibition gratuitously to all parochial and charity schools in and about the city of Dublin. This exhibition is the most pronounced instance of success resulting from the system of circulating specimens from the Central Museum at South Kensington in the country at large.

20. The Council of the Royal Dublin Society report the total attendance at all the exhibitions, lectures, &c., during the year 1858, to be 150,363; the numbers in 1857 having been 123,631 persons. The Society perseveres, however, in counting the same person as a separate individual on each occasion of his attending a lecture.

Royal Zoological Society.

(*See* Appendix D., p. 93.)

20 (*b*). The number of visitors at the Gardens of this Society in 1858 exhibit a large increase on those of the previous year, a result which the Council attribute to the "increased attraction which a large addition to their stock "of animals has enabled them to bring before the public." The visitors in 1858 were 144,542; in 1857, 127,598, being an excess of 16,944 in favour of the past year.

Committee of Lectures.

(*See* Appendix E., p. 95.)

21. The details of the lectures delivered in the institutions in Dublin, and in the provinces, are stated in the Appendix. With regard to the *Provincial lectures*, the Committee is able to report that the attendance has been on an average nearly 200, showing an increase of about one-third over the returns of 1857; and that the candidates for examination have increased in about the same ratio.

The system of conducting the examinations has been altered in conformity with the suggestions of last year's report. An officer now attends the working of papers sent to each locality, and when they are completed, they are returned to Dublin, and reported on by examiners. The Committee states that, notwithstanding the short trial to which the new system has been subjected, the results are satisfactory, and acceptable to the Local Committees.

Industrial Museum of Scotland.

(*See* Appendix F., p. 101.)

22. The Director reports fully the numerous additions which have been made, chiefly by donations, to this Museum during the past year. The collections have assumed an extent and importance which makes any delay in the erection of suitable buildings highly detrimental to the public service; and it is hoped, that as during the last session the necessary expenditure was sanctioned, the plans and estimates submitted by Captain Fowke and approved by this Department, may be forthwith adopted. The Director "earnestly represents the great importance of proceeding "with the new buildings without any delay."

The *Laboratory of the Museum* has been attended by 12 pupils, all, with one exception, students of Industrial Science. Many important investigations have been conducted in this department. The students of the University class of Technology have numbered 40, being the same as last year.

Museum of Natural History.

(*See* Appendix G., p. 107.)

23. The returns of numbers of visitors to this Museum will be found in the report of the Regius Keeper. For the last two years they are as follows:—

1857 - - -	75,754
1858 - - -	88,831

Of these 88,831, 2,756 were admitted on students' days, on a payment of 6*d.* each person; 549 were students of the University, &c., and the remaining 85,526 were admitted free on Saturdays and other public holidays.

The acquisitions by purchase and gift are given in the Keeper's report (Appendix G.) That officer repeats the remarks contained in his report for the preceding year respecting the very insufficient space at present afforded to his collections, and the urgent want that is felt for the new buildings.

II (*a*).—Local Schools and Institutions for Science.

24. These may be divided into Schools for the teaching of Navigation, to which are attached, in most cases, trade classes, and Schools for Scientific instruction only, or Trade Schools.

25. The Navigation Schools do not show an increase in their number over that of the preceding year. Captain Ryder, R.N., recommended by the Admiralty, was appointed a special commissioner to inquire into the present state and future prospects of these schools, and has reported in detail on the subject: his report is appended, and a Minute drawn up on it.*

26. By comparing the statistics of the existing Schools of Navigation for 1858 with the returns published in last year's report, it appears that the total numbers on the books have been, in 1858, 2,554 against 2,421 in 1857; and the total fee receipts 1,208*l.* 17*s.* 6½*d.* against 963*l.* 0*s.* 8*d.* Six masters have taken the navigation certificate of the Depart-

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* Aid to Navigation.

At South Kensington, the 10th day of June 1859.

By the Lords of the Committee on Education of Her Majesty's most Honourable Privy Council. Present—The Most Noble the Marquess of Salisbury, K.G., Lord President of the Council; the Right Hon. C. B. Adderley, Vice-President of the Committee of Council on Education.

I. My Lords renew the consideration of Captain Ryder's Report on Navigation Schools (see Appendix I.), and generally approve of the same.

As respects the payments to teachers suggested by Captain Ryder, my Lords consider that instead of dividing the subjects of competency into the several groups specified in the Minute of the 25th February 1856, it would be preferable to combine together the following groups:—1, a general acquaintance with mathematics; 2, general navigation and nautical astronomy; 3, adjustment and skilful handling of instruments; and, 4, physical geography; and to make the passing in all of them necessary for the appointment as a master to a navigation school.

II. Instead of Captain Ryder's suggestion for two augmentation grants, consisting of a fixed payment and group money (p. 172), my Lords will adopt but one augmentation grant.

III. There will be certificates of three grades of competency to teach navigation, applicable to the head master and the first and second assistants, to which the following augmentation grants will be attached:—

	1st.	2nd.	3rd.
Head master	£120	£100	£80
First assistant	80	70	60
Second assistant	60	50	40

IV. Any teacher holding a certificate of competency to give primary instruction will receive from the Science and Art Department a sum equal to the augmentation grant which has been attached to such certificate, in addition to the grants above mentioned.

V. As respects groups 5, physics, mechanics, and the steam engine; 6, chemistry; 7, natural history; 8, chart, freehand, and mechanical drawings; the payments will be governed by the General Science Minute of the 2nd of June 1859 (sec. 5).

VI. There will also be given on results the further payments to masters, and Queen's prizes, according to the scale fixed by the General Science Minute (sec. 9) of the 2nd June 1858.

Henry Cole, Secretary.

ment. The results of the year's working in the Navigation Schools are given in Appendix I., p. 186.

27. *Science* Schools and Classes have continued in action at Bristol; Birmingham; Wigan; St. Thomas', Charterhouse, London; and Mr. Green's Sailors' Home, Poplar. The working men's lectures at Jermyn Street have also been continued, and lectures on the scientific divisions of the South Kensington Museum have been given. These lectures are reported on elsewhere. The Science Schools have been organized on the plan of the Art Schools, as far as it has been found possible to do this; at present, at Bristol, there are a Trade School and a Training School, and at Wigan, there is a Mining School. The other classes are exceptional in character, and adapted to the especial wants of the district requiring instruction. The whole question of Science teaching has received the careful consideration of the Board.

28. A Minute that has been adopted, is appended in a note.* Its effect, it is hoped, will stimulate the public to

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* Aid to Science-Instruction.

At South Kensington, 2nd day of June 1859.

By the Lords of the Committee on Education of Her Majesty's most Honourable Privy Council. Present—the Most Noble the Marquess of Salisbury, K.G., Lord President of the Council; the Right Hon. C. B. Adderley, Vice President of the Committee of Council on Education.

My Lords proceed to revise the Minutes which have been passed in the Science and Art Department for the encouragement of scientific instruction among the industrial classes of this country who have already received primary education.

I. All former Minutes relating to Science or Trade Schools, and scientific class-instruction, except those referring to Navigation, Public Lectures, and the training of teachers, are hereby cancelled, and the following regulations are substituted in their place.

II. The Science and Art Department will hereafter assist the industrial classes of this country in supplying themselves with instruction in the rudiments of—

1. Practical and Descriptive Geometry, with Mechanical and Machine Drawing, and Building Construction,
2. Physics,
3. Chemistry,
4. Geology and Mineralogy (*applied to Mining*),
5. Natural History,

by augmentation grants in aid of salary to competent teachers, and by payments and prizes on successful results, and grants for apparatus, &c.

III. Any school or science class, either existing or about to be established, and duly approved by the Science and Art Department, may apply, through its managers, *for a certificated teacher*, or for the certification of any teacher, in any one or more of the above-named branches of Science.

IV. Examinations for certificates of three grades of competency to teach

do the work of scientific instruction for itself as much as possible, the State aid being simply auxiliary.

29. Of six students in training at the Chester Training School, five have succeeded in passing the examination for a certificate as Science-masters, and the experiment of thus supplying the demand for competent science-teachers will be continued in the present year.

II (*b*).—Local Schools of Art and Elementary Drawing.

30. The Schools of Art have exhibited during the past twelvemonth a great increase in numbers and in prosperity.

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any of the above-named Sciences will be held annually by the Department, in the last week of November, in the Metropolis; as follows:—

Nos. 1, 2, and 5, at South Kensington.
No. 3, at the Royal College of Chemistry, Oxford-street.
No. 4, at the School of Mines, Jermyn street.

V. Annual Grants, in augmentation of salaries of teachers so certified to teach in any of the above-mentioned Sciences, will be given as follows: —

For the 1st Grade of Competency	-	-	£20
„ 2nd „ „	-	-	15
„ 3rd „ „	-	-	10

Any teacher holding a certificate of competency to give primary instruction will receive from the Science and Art Department a sum equal to the augmentation grant which has been attached to such certificate, in addition to the grants above-mentioned.

VI. Such grants will only be made while the teacher is giving instruction in a school or science class for the industrial classes, approved by the Department.

VII. The Department will require that suitable premises shall be found and maintained at the cost of the locality where the school or class is held; that the names of ten students shall be entered, whose fees for half a year shall have been paid in advance; and that the local managers shall guarantee, for the support of the schools and teachers, from fees or local funds, a sum at least equal to the grants so long as they shall be paid. If at any time neither fees of pupils nor local funds cover the requisite amount, it must be inferred that there is no demand for instruction in the above-named Sciences in that locality, which the Government is justified in aiding; and the assistance of the Department will be withdrawn.

VIII. Every school or class having a certified teacher will be inspected and examined once a year by the Department, and Queen's prizes of an honorary kind will be awarded to successful students.

IX. Payments will be made to the teacher on each first-class Queen's prize obtained by the student, 3*l.*; on each second class, 2*l.*; and on each third class, 1*l.*

X. A grant towards the purchase of apparatus, fittings, diagrams, &c., of 50 per cent. on the cost of them, will continue to be afforded to schools and classes in Mechanics and similar Institutions.

Henry Cole, Secretary.

The healthy state of those already established is shown by the amount of fees paid by students, the total of which was, in 1857, 10,495*l.* (the highest then known), while in 1858 it was 12,735*l.* 14*s.* 5½*d.*

31. New schools have been opened since the date of the last report at Ipswich, Gloucester (forming a branch of the Cheltenham School of Art), Cambridge, Devonport, Stirling, Brighton, Burnley, Halifax, and, in the Metropolitan district, St. George's-in-the-East. The School of Design of the Board of Manufactures at Edinburgh has been brought into union with the Department, and the best results may be fairly expected from it. Mr. Primrose, the Secretary, reports very favourably of the proceedings during the first six months, and of the extended operations of the School. (*See* Appendix K.) The total number of Schools of Art now reaches 78.

32. But while the localities thus show their appreciation of the system of instruction, and the schools are consequently rapidly progressing towards being self-supporting, the premises in which they are held, are too often a great drawback to their success, and occasionally preclude the possibility of opening the classes at all. The difficulties adverted to in the last report still present themselves as regards any application of Act 18 & 19 Victoria, which gives the inhabitants a power of rating.

33. The Minute of this Board, dated 17th December 1857, (reported as being in operation during a part of 1858,) which was framed to strengthen the action of Art Schools, especially with reference to teaching in schools for the poor, has proved beneficial. In almost every school pupils have been found ready to qualify themselves for the conditions necessary to the new appointments of pupil-teachers, by which they receive 20*l.* per annum. At the same time, the increase in the number of children of the working classes taught drawing, and in the number of rewards given to them by the Department for success in the first grade examinations, is evidence that the arrangement is beneficial to the class requiring it. The number of pupil-teachers appointed during the year under these conditions has been 69, in addition to 27 other students whose appointments under the old regulations have been renewed, in order to meet special requirements in the schools to which they belong. During the past year the qualification necessary for the appointment of a pupil-teacher has been attained by no less than 107 students of the various Schools of Art.

34. The following Table shows the total number of students who have attended the *Central* Schools of Art in each locality during the year 1858, separated from those who have been taught in Public Schools for the poor.

——	1855.	1856.	1857.	1858.
Provincial Schools of Art	8,274	10,204	10,238	10,784
Metropolitan District Schools (including Female School, Gower Street)	610	602	778	1,147
Students in Training for Masters at South Kensington	79	106	71	65
Schoolmasters and Pupil-teachers	1,547	1,425	1,323	2,012
Totals	10,510	12,337	12,509	14,008

35. The statistics of each School of Art are given very fully in Appendix H.; but the following Table presents a comparative view of all the schools in respect of the numbers taught drawing, and the voluntary payments of the students.

LOCAL SCHOOLS OF ART, 1859.

Name of School.	Population in 1851.	No. taught in Public Schools.	No. taught in Central School.	Total No. of Students.	Amount of Fees paid.
					£ s. d.
Aberdeen	71,973	953	245	1,198	177 14 1
Andover	17,266	501	53	554	85 9 9
Bath	54,240	700	136	836	221 5 9
Basingstoke	*See* Andover.		..	..	..
Belfast	120,000	240	12	252	..
Birkenhead	24,285	399	94	493	149 1 2
Birmingham	234,841	1,163	820	1,983	687 19 0
Bolton	61,171	997	217	1,214	176 12 0
Bridgnorth (new school)	6,172	..	55	55	60 1 0
Brighton (new school)	..	..	160	160	..
Bristol	137,328	2,496	317	2,813	294 3 0
Burnley	20,828	661	157	818	119 11 0
Burslem	20,000	355	40	395	..
Cambridge (new school)	..	..	77	77	..
Carlisle	26,310	540	136	676	107 15 0
Carmarthen	10,524	1,228	147	1,375	108 5 5½
Carnarvon	8,674	687	78	765	144 13 2
Cheltenham	35,051	1,215	202	1,417	257 15 0
Chester	27,766	1,712	179	1,891	166 17 0
Clonmel	17,724	150	68	218	89 15 0
Coalbrookdale	8,000	260	96	356	128 10 0
Cork	86,435	558	260	818	182 13 10
Coventry	36,812	487	133	620	141 0 6
Darlington	11,228	890	121	1,011	192 19 0
Devonport (new school)	..	..	53	53	..
Dublin	..	..	440	440	323 17 3
Dudley	37,962	105	856	961	97 5 6
Dundee	78,931	910	520	1,430	283 6 10

Local Schools of Art, 1859—*continued.*

Name of School.	Population in 1851.	No. taught in Public Schools.	No. taught in Central School.	Total No. of Students.	Amount of Fees paid.
					£ s. d.
Durham	13,188	260	117	377	135 7 6
Edinburgh	..	..	434	434	..
Exeter	..	..	298	298	273 2 6
Glasgow	329,097	960	839	1,799	643 15 0
Gloucester (new school)	..	..	110	110	..
Greenock	36,689	462	175	637	228 5 0
Guildford (new school)	..	..	92	92	..
Hanley	12,468	505	160	665	102 17 6
Halifax	..	..	124	124	..
Hereford	12,108	460	85	545	79 2 6
Ipswich (new school)	..	..	..	..	..
Lancaster	16,168	554	141	695	162 19 6
Leeds	172,270	2,489	150	2,639	251 8 0
Limerick	55,268	240	84	324	141 5 0
Liverpool, North District	400,000	1,496	288	1,784	402 9 10
,, South District	375,955	1,125	311	1,436	297 12 3
Macclesfield	39,048	673	150	823	122 6 1
Manchester	316,213	3,216	573	3,789	564 11 0
Metropolitan :—					
South Kensington			438		1,046 16 0
Gower Street			117		288 18 6
St. Martin's			185		203 15 0
Spitalfields			125		135 1 0
Finsbury			104		131 16 0
St. Thomas Charterhouse.	2,362,236	9,182	108	10,394	89 2 0
Lambeth			82		68 11 0
Rotherhithe			31		19 2 0
Hampstead			33		52 7 0
St. George's-in-the-East			21		23 17 0
Newcastle-under-Lyme	10,569	165	86	251	52 0 6
Newcastle-upon-Tyne	87,784	922	347	1,269	245 8 1
Norwich	68,195	1,190	252	1,442	187 10 0
Nottingham	57,407	1,264	347	1,611	221 18 6
Oxford	..	..	..	..	..
Paisley	47,952	640	147	787	72 5 4
Penzance	10,000	553	127	680	128 6 9
Sheffield	135,310	535	390	925	406 7 6
Southampton and Romsey	43,029	760	229	989	128 5 10
Stirling (new school)	..	..	135	135	..
Stoke-upon-Trent	57,942	128	168	296	164 4 0
Stourbridge	7,847	472	113	585	149 7 9
Taunton	14,176	325	195	520	328 6 9
Tavistock	8,068	202	86	288	73 18 9
Truro	10,733	335	71	406	62 16 6
Warrington	23,363	807	150	957	148 12 6
Waterford	25,000	197	71	268	138 13 3
Wolverhampton	49,985	706	114	820	182 9 6
Worcester	27,828	603	327	930	104 13 0
Yarmouth (Great)	30,879	772	153	925	154 14 6
York	40,359	550	236	786	124 18 0
Total	—	49,955	14,771	64,714	12,735 14 5½

36. Two editions of the Directory of the Department, which contains full information on all points of its working, have been exhausted during the year, and a third has been recently printed.

37. The system of the National competition, by which all the prize works of each school are brought into competition, continues to flourish. In the year 1858, 75 National medallions were awarded throughout the Schools of Art by

the Examiners, Sir Charles L. Eastlake, P.R.A., D. Maclise, R.A., and R. Redgrave, R.A. By the consequent distribution of the works of art then awarded, which takes place among the schools whose students are successful at the National competition, 36 Schools of Art received from one to five of the following prizes, in proportion to the number of the medallions gained by each school :—

a. Owen Jones' Grammar of Ornament. (One prize.)
b. Waring's Examples of Italian Art (4 frames)
The Arundel Society's Plates of Perugino's Frescoes (framed) - - - - - } (One prize.)
Robinson's Treasury of Ornamental Art -
c. Owen Jones' Alhambra. (One prize and a half.)
d. Gruner's Specimens of Ornamental Art. (One prize.)
e. Photographs, or Electrotypes, or Copies after Mulready, according to the printed list.

38. It is by the distribution of works of art reproduced from the finest originals, that a nucleus of a local museum may be established. The results of the competition in 1858, together with the names of the successful students, &c., are shown in the accompanying tabulated form.

ALPHABETICAL LIST of STUDENTS rewarded at the NATIONAL COMPETITION, 1858.

Names of Students.	School.	Stage rewarded.	Subject.
Andrews, William	Coventry	12	Trajan scroll.
Barlow, James	Hanley	6 a.	Laocoon.
Blair, John	Paisley	9 a.	Anatomical study.
Bishop, Alexander	Taunton	22 c.	Elementary design.
*Brock, William	Hanley	10 d.	Foliage in outline.
Brookes, Robert W.	Sheffield	23 d.	Design for silver work.
Brookes, Maria	Wenlock	3 b.	Pilaster in outline.
Brown, John	Glasgow	23 c.	Design for lace.
Brown, Eleanor	Exeter	22 c.	Elementary design.
Chase, Mary	Gower Street	13 a.	Flowers in water colours.
Chetwynd, Elijah	Hanley	22 d.	Historic ornament.
Cole, Clara	Gower Street	10 a.	Foliage in outline.
Copham, Alfred	Taunton	3 b.	Pilaster in outline.
Crossland, William	York	3 b.	Pilaster in outline.
Cruse, Edw. Nowell	Training School	2 b.	Tarsia in outline.
Davies, Thomas	Manchester	11 b.	Painting from a copy.
Drake, William	Stoke	22 d.	Historic ornament.
Dell, Elizabeth A.	Warrington	13 a.	Flower in tempera.
Duncan, William	Dundee	4 b. 5 b.	Biga and egg plant.
*Dunn, Elijah E.	Hanley	12	Egg plant.
Evans, Joseph	Stoke	10 a. 13 a.	Foliage in outline.
Evans, Richard	Birmingham	18 a.	Pilaster modelled.
Ewan, Robert	Aberdeen	3 b.	Pilaster in outline.
Fillary, T. F.	Finsbury	23 a.	Mechanical drawing.
Fitzgerald, Thomas	Glasgow	23 c.	Designs for wall paper.
Glass, Alexander	Burslem	3 b. 10 a.	Pilaster and foliage in outline.
Grindley, Richard	Carnarvon	2 b.	Tarsia in outline.
Hall, George	Birmingham	16 a.	Figure in monochrome.
*Hampton, Thomas	Hanley	10 b.	Foliage in outline.
Hare, Vere	Taunton	2 b.	Tarsia in outline.
Harrison, Frances	Dublin Lace School	14 a.	Flowers in water colours.
Howard, Augustus W.	Limerick	6 a.	Outline of the figure.

* Has already received a National medallion.

List of Students rewarded—*continued.*

Names of Students.	School.	Stage rewarded.	Subject.
Hill, Arthur	Nottingham	15	Group in oil.
Ingham, James	Warrington	7 b.	Foliage from a copy.
*Jackson, Francis G.	Birmingham	5 b. 8 b. 9 a.	Egg plant, Discobolus, and anatomical studies.
Jones, Henry	Dudley	10 d.	Foliage in outline.
Jones, Elizabeth	Waterford	16 a. 22 c.	Figure in oil, and elementary design.
Kelly, Edwin J.	Macclesfield	5 b.	Egg plant.
Kipling, John	Stoke	18 a.	Pilaster modelled.
*Mallinson, Thomas.	Coventry	5 b. 11 b.	Florentine scroll, and painting from a copy.
Marsh, James	Stoke	22 d.	Historic ceramic forms.
McFarlane, James	Paisley	22 d.	Historic ornament.
*Menzies, John	Aberdeen	4 b.	Rosette.
Mercer, Edward	Bath	2 b.	Tarsia in outline.
Nicholl, T. G.	Training School	23 a.	Mechanical drawing.
*Nicholson, Walter	Sheffield	23 d.	Designs for cutlery.
*Nicholls, Mary Jane	Dublin Lace School	23 c.	Designs for lace and wall paper.
Oscroft, Samuel	Nottingham	16	Head of Laocoon in oil.
Parr, Joseph	Burslem	2 b.	Tarsia in outline.
Parker, John	Birmingham	12	Egg plant.
*Pilsbury, Wilmot	Birmingham	14 d.	Foliage in oil.
*Proctor, Fanny	Newcastle-on-Tyne	22 d.	Historic ornament.
Reid, George	Aberdeen	22 c.	Elementary design.
Rhodes, William	Hanley	3 b.	Pilaster in outline.
Riley, Joseph	Bolton	7 a.	Foliage from a copy.
Ridge, William.	Hanley	23 d.	Design for a vase.
Roche, John	St. Martin's	4 b.	Shading from a copy.
Stainer, Wm. Henry	Southampton	2 b.	Scroll in outline.
*Stannus, Hugh	Sheffield	23 d.	Design for silver work.
Strangman, Elizabeth	Waterford	14 a.	Foliage in oil.
Shepherd, Juliana	Manchester	4 b.	Biga.
Smith, E. F.	Birkenhead	4 b.	Ditto.
Smith, Robert G.	Sheffield	18 a.	Pilaster modelled.
Tomkinson, Charles.	Hanley	5 b.	Egg plant.
*Townroe, Reuben	Sheffield	23 d.	Design for silver work.
Turner, E. P.	Sheffield	5 b.	Florentine scroll.
Turner, Read	Sheffield	10 b.	Foliage.
*Von Sturmer, Frances	Gower Street	22 c.	Elementary design.
*Walker, J. B.	Burslem	4 b.	Biga.
Waite, Robert T.	Cheltenham	10 a.	Foliage in outline.
Wells, Luke	Worcester	23 c.	Design for a plate.
Wilson, David	Glasgow	8 a.	Frieze.
Wildblood, Seddon	Burslem	22 c.	Elementary design.
Wright, Alice	Cork	12	Rosette in oil.
*Woodhouse, John	Dublin	8 c.	Anatomical study modelled.
Honourable Mentions, 1858.			
Bishop, John	Stoke	23 d.	Historic ornament.
Cole, Clara	Gower Street	13 a.	Flowers in water colours.
Hughes, Thomas	Training School	23 b.	Architectural designs.
Oscroft, Samuel	Nottingham	15	Head of Laocoon in oil.

* Has already received a National medallion.

Table showing the Number of Local Medals and National Medallions awarded to each School of Art, 1858.

Name of School.	No. of Local Medals.	No. of National Medallions.	Remarks.	Name of School.	No. of Local Medals.	No. of National Medallions.	Remarks.
Aberdeen	10	3		Bolton	4	1	
Bath	6	1		Bristol	7	—	
Belfast	8	—		Burslem	16	4	5 awards.
Birkenhead	7	1		Carlisle	—	—	
Birmingham	22	5	7 awards.	Carmarthen	5	—	

Local Medals and National Medallions awarded—*continued.*

Name of School.	No. of Local Medals.	No. of National Medallions.	Remarks.
Carnarvon	9	1	
Cheltenham	12	1	
Chester	4	—	
Chichester	—	—	
Clonmel	2	—	
Cork	21	1	
Coventry	13	2	3 awards.
Darlington	—	—	
Dublin :—			
School of Art	26	1	and 1 money
Lace School	—	2	prize.
Dudley	9	1	
Dundee	20	1	2 awards.
Durham	3	—	
Exeter	11	1	
Glasgow	20	3	
Greenock	2	—	
Hampshire, N. W. District.	—	—	
Hanley	21	8	
Hereford	6	—	
Ipswich	—	—	
Lancaster	2	—	
Leeds	1	—	
Limerick	10	1	
Liverpool, N.	5	—	
Liverpool, S.	21	—	
Macclesfield	3	1	
Manchester	26	2	
Metropolitan Training School :—	20	2	
Spitalfields	2	—	
Female School (Gower Street).	19	3	
Charterhouse	2	—	
Finsbury	7	1	
Rotherhithe	—	—	
St. Martin's	15	1	
Metropolitan Training School—*cont.*			
Lambeth	2	—	
Hampstead	—	—	
Newcastle-under-Lyme.	8	—	
Newcastle-upon-Tyne.	13	1	
Norwich	16	—	
Nottingham	17	2	
Paisley	6	2	
Penzance	7	—	
Petersfield	—	—	
Plymouth	3	—	
Reading	—	—	
Sheffield	28	7	and 3 money prizes.
Southampton	5	1	
Stoke	24	4	
Stourbridge	7	—	
Taunton	10	3	
Tavistock	4	—	
Truro	7	—	
Warrington	26	2	
Waterford	9	2	3 awards.
Wenlock and Coalbrookdale.	9	1	
Wolverhampton	12	—	
Worcester	23	1	
Yarmouth, Great	5	—	
York	2	1	
	636	75	No. of medals awarded.
		82	No. of awards.
		68	No. of students whose awards carry the prizes of 10*l.*

39. Reference has already been made to the advance in the teaching among schools for the poor, which, in connexion with Schools of Art, has been chiefly owing to the new regulations attached to the appointment of pupil-teachers, and secondarily to the payments on the success of poor children. The number taught in connexion with Schools of Art only, were in 1857, 28,974, and in 1858, 49,955. In the metropolis alone the number taught has increased by nearly 2,000.

40. In addition to the payment of 3*s.* to the Art-master on each child from a poor school who may take a reward, a further payment of 2*s.* for every drawing exercise of such a child, which upon examination is marked "fair," is now given by the Department. The following are the amounts paid during last year under these two heads :—

3*s.* payments on rewards -	- £247	2	0
2*s.* payments on exercises marked "fair"	47	10	0

41. The results of the examinations in drawing in the Diocesan and other Training Colleges are given in the following Tables. The numbers show a large increase on those of 1857, and the certificates taken have been 62 as compared with 29 in 1857. To these certificates must be added the number obtained at Schools of Art by candidates who elected to be there examined, which has been 20 against 10 in the previous year. The total, therefore, gives 82 certificates in the year 1858, being an increase of 43 over the number obtained last year.

TRAINING SCHOOL EXAMINATIONS.

SCHOOLS FOR MASTERS ONLY.

Name of School.	Students.		Teachers.		Certificates granted.	Proportion of Awards.
	No. Examined.	No. of Prizes.	No. Examined.	No. of Prizes.		
Battersea	113	70	14	5	6	·59
Carmarthen	26	11	6	1	—	·37
Carnarvon	24	17	4	2	2	·67
Chelsea, St. Mark's	102	46	29	14	8	·46
Chester	46	41	19	4	6	·69
Chichester	10	5	4	2	—	·50
Culham	40	26	10	3	1	·58
Durham	47	34	15	8	5	·67
Edinburgh, Scottish Epis.	16	—	—	—	—	—
Exeter (Diocesan)	38	30	7	1	3	·68
Hammersmith	26	24	9	2	1	·74
Metropolitan	71	51	17	3	6	·61
Saltley	44	20	13	4	2	·42
Winchester	26	7	3	—	—	·24
York and Ripon	105	22	26	12	1	·25

FOR MISTRESSES ONLY.

Bishop's Stortford	—	—	—	—	—	—
Brighton	34	3	—	—	—	·08
Bristol, Gloucester, and Oxford.	59	8	11	2	—	·14
Derby	36	—	4	3	—	·07
Home and Colonial	112	24	9	2	1	·21
Liverpool	39	39	7	3	3	·93
Norwich	33	7	2	1	1	·22
St. Leonard's-on-Sea	21	21	—	—	5	1·
Salisbury	57	7	1	1	—	·13
Truro	11	2	—	—	—	·18
Warrington	78	16	—	—	—	·20
Whitelands	101	14	4	2	—	·15

FOR BOTH MASTERS AND MISTRESSES.

Borough Road	122	70	29	9	3	·52
Cheltenham	146	85	16	5	2	·55
Edinburgh Established Church	152	30	16	5	—	·20
Edinburgh Free Church, and St. Andrew's Hall, Edinburgh	169	81	14	6	1	·48
Glasgow Established Church	96	52	11	—	1	·48
Glasgow Free Church	113	27	—	—	—	·23
Marischal College, Aberdeen	—	—	11	1	—	·09
Westminster (Wesleyan)	100	64	6	3	4	·63
Totals	2,213	954	317	104	62	·41
South Kensington Training School	389	98	28	18	3	·27

42. The number examined in Training Colleges has been 2,530 in 1858, compared with 1,729 in 1857.

43. The rewards given to schoolmasters, pupil-teachers, and children, were detailed in the report for 1857, p. 47. They have been, for the past year, in all the examinations, as follows:—

Slate Examinations - - -	1,056
First grade Examinations - -	2,805
Second grade Examinations - -	2,577
Total - - -	6,438

In the previous year they amounted to 4,070. As the system advances and becomes established, it is obvious that the standard should be raised, especially after a school has existed for a sufficient time. The Minute printed in the note below shows the principle upon which the standard will be raised.*

III.—The Central Training School for Art Masters and Mistresses.

44. The satisfactory increase in all the classes reported last year has continued, and the Department is now able to

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* Examinations for Memoranda of Competency to teach Drawing, for Prize-Studentships in Schools of Art, and for Rewards.—Awards of Instruments, Books, &c.

At South Kensington, the 21st day of March 1859.

By the Lords of the Committee on Education of Her Majesty's most Honourable Privy Council.

My Lords reconsider the question of the award of books, instruments, &c. given for success in the Art-examinations to pupil-teachers, and teachers, or students in training for that office, who are candidates for certificates of competency to teach drawing, and to the students in Schools of Art.

Hitherto all persons whose papers have been marked "Good" have received rewards. The success of pupil-teachers, teachers, and students in training has in addition been registered in their favour towards a memorandum of competency to teach drawing, and that of students in Schools of Art and others towards a certificate of proficiency in drawing.

My Lords consider that the time has arrived when the standard for obtaining the *rewards* may be raised, and therefore resolve that after the examination in Training Colleges at Christmas 1859, and the examinations in Schools of Art during the year ending April 1860, those persons whose papers have been marked "Good" shall continue to have their success registered in their favour; but that only those persons whose papers obtain the mark "Excellent" shall be entitled to receive, in addition, the *rewards* hitherto given for success in these examinations.

report, after the experience of two years at South Kensington, that the numbers in that school greatly exceed those which attended it when it was held at Marlborough House, and that its efficiency both as a Training-school of Art-teachers, and as a centre for Art-education has been very much strengthened.

45. Upon the removal of the school to Kensington, it was apprehended that, while the training class would suffer no falling off, the public students would, perhaps, decrease. But after the first session, these students have, on the contrary, rapidly increased in number. They have been, during the five sessions now reported on at South Kensington, respectively,—107, 172, 223, 277, and 261; while the fees of the school have risen from 169*l.* 4*s.* to 522*l.* 1*s.*

46. The Head-Master's report contains the following remarks:—

"Its efficiency in regard to the country generally is steadily increasing, both in the more advanced training of the students, and in the facilities afforded to masters already appointed to provincial schools; by which they are enabled, for longer or shorter periods, to renew their studies in the training-school.

"As regards the diffusion of Art-education amongst the working classes in London, the prospects of advancement held out in my last report have been fully realized. One district-school (St. Martin's) has been established on an independent basis (its teachers being paid from the fees received), and has ten parochial schools attached to its teaching. Two others, with ten other parochial schools, will be placed on a similar footing on the 1st of March next. Morning classes for ladies have been established in connexion with two district-schools, the teacher in both cases being paid by the fees, and two training-schools (one for males and females, and one for females only) have also been made centres for independent teaching by trained students. The parochial teaching has also been considerably extended during the past year, and a commencement has been made to introduce the teaching of the Department into the middle-class schools of London. I hope, during the ensuing year, that considerable progress will be made in this direction. While thus developing its primary purpose as a training school, its collateral object as a school of ornamental art has not been lost sight of. Several manufacturers and others have offered prizes for original designs for various objects, which have been very successfully competed for in the school. The works being executed for the new Houses of Parliament (alluded to in the last report) have been carried on during the past year, and now rapidly approach completion, I am happy

to say, to the entire satisfaction of the Royal Commission of Fine Arts."

47. Mr. Burchett further reports the satisfactory success of two masters from the Training-school, who have obtained, in open competition, the important Art-masterships of Dulwich and Cheltenham Colleges.

48. The statistics of the school, for the two sessions that have passed since the last report, ending respectively on the 31st July 1858 and the 28th February 1859, are as follows:—

Session ending 31st July 1858.

Students in training receiving allowances	65
„ „ paying fees	277
„ „ free	29
„ „ parochial class	38
Royal Engineers	29
Total number of students taught during the session	438
Fees received	524*l.* 15*s.*

Certificates taken by students trained in the school, 24, viz:—

12	of the	1st	Group, Drawing.
2	„	2nd	„ Painting.
1	„	3rd	„ Figure.
2	„	5th	„ Modelling.
6	„	6th	„ Mechanical.
1	„	6th	„ Architectural.

Session ending 28th February 1859.

Students in training receiving allowances	58
„ „ paying fees	261
„ „ free	34
„ „ parochial class	25
Royal Engineers	28
Total number of students taught during the session	406
Fees received	522*l.* 1*s.*

Certificates taken by students trained in the school, viz.:—

9	of the	1st	Group, Drawing.
4	„	2nd	„ Painting.
3	„	4th	„ Modelling.
6	„	5th	„ Mechanical.
10	„	6th	„ Architectural.

49. The totals for the year ending 28th February 1859, that is to say, for two complete sessions, have been :—

	£	s.	d.
Fees - - - -	1,046	16	0
Certificates taken - -	56	0	0

Twelve students, upon the recommendation of the Department, have obtained appointments as masters during this period; six students have been dismissed from the training class on account of unsatisfactory progress, and two have resigned.

50. In the national competition for medals in 1858, the Central School and District Schools in London were successful in obtaining 7 medals; of these, 2 were taken by students in the Training School; 3, by the Female School, Gower Street; 1, by St. Martin's District School; and 1, by Finsbury District School. 67 ordinary bronze medals of the Department were awarded as follows :—

Training-School - - - -	20
Female School, Gower-Street - -	19
St. Martin's - - - -	15
Finsbury - - - -	7
Spitalfields - - - -	2
Charterhouse - - - -	2
Lambeth - - - -	2
	67

51. The complete system of examination for the first, second, and third grade of drawing-exercises has been introduced into the London schools during the year 1858. In the first grade, 263 rewards and 311 elementary prizes were taken; in the second grade, 218 rewards and 2 prize-studentships; in the third grade, 67 bronze medals and 7 national medallions (in the distribution given above).

Metropolitan District Schools.

52. The following table shows the average number of pupils in the Metropolitan District Schools taught by masters in training at the Central School, during the sessions ending 31st July, 1858, and 28th February, 1859. The return includes the Female School in Gower Street, which, since the date of the last report, has been formed into a district-school.

Schools.	Session ended 31st July 1858.	Session ended 28th Feb. 1859.	Remarks.
Female School, Gower St.	117	117	
Fees . .	131*l.* 2*s.*	157*l.* 16*s.* 6*d.*	These fees are received by the Department.
St. Martin's . .	165	185	
Charterhouse . .	99	108	
Spitalfields . . .	151	125	
Finsbury	100	104	
Lambeth . . .	52	82	Modelling class established makes a great increase.
Rotherhithe . .	32	31	
Hampstead . . .	34	33	
Christ's Ch., St. George's in the East . .	60	21	School opened in April 1858.
Totals . . .	810	806	

53. The results of the examinations in these schools have been given in the general summary of the examinations in the Central School.

Metropolitan Public Schools for the Poor.

54. In continuation of the statistics printed in the report for 1857, the following table shows the growth and present state of these schools taught by the masters in training at the Central School :—

—	Schools taught.	Schools in which all the Children are taught.	Number of Children taught.	Number of Schoolmasters employed in teaching Drawing.	Number of Pupil-teachers employed in teaching Drawing.
Oct. 1855	35	—	1,724	—	3
Feb. 1856	37	1	2,085	—	3
Oct. 1856	41	8	3,913	3	18
Oct. 1857	45	22	5,202	11	41
Feb. 1858	57	33	7,439	11	54
July 1858	60	39	8,255	12	61
Feb. 1859	62	48	9,182	20	68

55. Of the rewards before enumerated, 311 elementary, 254 first grade, and 16 second grade prizes were taken by students in these schools for the poor.

In connexion with elementary education, it may be mentioned that the following training colleges are taught by masters connected with the Training School:—

Whitelands (for females).
Battersea.
Wesleyan (males and females).
Catholic, Brook Green, Hammersmith.
Highbury.
Home and Colonial (females).
Homerton College.
Trade and Navigation School, Poplar.

It may also be mentioned that two masters trained in the schools also teach classes in working men's institutions and other private schools, and that three female certificated teachers are employed in teaching in two of the training colleges above mentioned, and one in the female classes in connexion with the two district schools before alluded to, besides teaching in other schools.

The following Table will exhibit a comparative summary of the Art-teaching in the metropolitan district during the five sessions from 1st October 1857 to 28th February 1859, inclusive:—

Number of Students under Instruction.	Session ending 28th Feb. 1857.	Session ending 31st July 1857.	Session ending 28th Feb. 1858.	Session ending 31st July 1858.	Session ending 28th Feb. 1859.
Training school,—					
Paying fees . .	107	172	223	277	261
Free . . .	146	168	173	161	145
Total . .	253	340	396	438	406
District schools, male .	514	492	587	693	689
" " female	84	116	116	117	117
Parochial schools . .	3,914	5,202	7,439	8,255	9,182
Total of students .	4,765	6,150	8,538	9,503	10,394

FEES RECEIVED.

	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Training school . .	169 4 0	324 19 0	449 8 0	524 15 0	522 1 0
District Female School, Gower Street . .	95 18 0	126 18 6	155 14 0	131 2 0	157 16 6
Total fees . .	265 2 0	451 17 6	605 2 0	655 17 0	679 17 6

IV.—South Kensington Museum.

56. The following separate Collections are now placed in this Museum, and continue under the general superintendence of the Secretary of the Department.

The British Fine Art Collections.

57. Mr. Redgrave, the Director of these Collections, which are chiefly placed in the Picture Galleries and consist of Mr. Sheepshanks' gift, reports as follows on the results of the last year :—

"The pictures in these collections having been thoroughly put in order, arranged, and catalogued on their removal to the new galleries at South Kensington, as reported last year, the principal duties connected with their charge have been those of narrowly watching the action of the atmosphere from the effects of lighting the galleries by gas, and from the crowds of persons (about 450,000) who have visited the pictures in 1858. It is satisfactory to be able to state that, after careful inspection, they have suffered no perceptible change from these or any other causes. Specimens of colours have been prepared with different vehicles, and been placed in different situations, to test the effect of gas, smoke, dirt, &c.* Although not the slightest accident to any work of art has arisen, it has been thought advisable to remove the rail a little further from the pictures lest persons leaning over to examine them more closely should touch them with their hats or breathe on their surfaces ; and, as it was necessary in order to do this that the galleries should be alternately closed, advantage was taken of the opportunity to thoroughly clean and recolour the rooms, and also to change the mode of heating from hot air, which had been found to be imperfectly distributed through the rooms, to hot water, which has been adopted in its stead ; these changes were effected without entirely excluding the public from the inspection of the pictures.

"The collection of water-colour drawings, commenced by Mr. Sheepshanks' gift, and by purchases sanctioned previously to opening the galleries, has been strengthened by the addition of some few works of the earliest followers of this art. With a view to explain their works a new edition of the catalogue has been prepared, and a special introduction added on this subject. Thus a commencement has been formed for a historical collection of this truly British art; such works are now easily obtainable, but, if neglected for a few years, might be hopelessly sought for when the formation of a gallery of water-colour paintings may be considered of national importance.

Though the convenience of the public, and that protection of the rights of the artist in his own works, which Mr. Sheepshanks provided for, do not allow of the permission to copy in the gallery being much extended, thirty-six persons since the opening of the gallery have sought and obtained permission for that purpose."

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* A committee, consisting of Professors Faraday, Hoffman, and Tyndall, with Mr. Redgrave and Capt. Fowke, R.E., has been appointed to report on the influence of gas on pictures.

Modern Sculpture, chiefly of the British School.

58. Marble Statues, of Venus, by J. Gibson, R.A., the property of Mr. Uzielli; of the Greek Slave, by Hiram Powers, the property of Capt. I. Grant; and of Cupid, by J. Spence, the property of Mr. W. Jackson, M.P., have been liberally lent to the Museum, and have been placed in the Sculpture Gallery, and the Casts belonging to British sculptures have been re-arranged.

Collection of Ornamental Art.

59. This collection has been arranged, and the whole opened to public inspection, since the 1st of April of the past year. The new rooms in the fire-proof building under the Sheepshanks' Gallery have been fitted to receive the more valuable specimens, many of which it had been impossible to exhibit since the removal from Marlborough House. They are now classified, labelled, and shown, together with later additions to the Museum, in these new rooms. The system of labelling has been much improved, and it is contemplated to extend to the whole collection a uniform and methodic principle of descriptive labelling.

The inventory announced as in preparation in last year's Report, has since been published, and is to be obtained at the doors of the building. It contains the list of all objects purchased or presented up to a recent period. A complete inventory is almost ready, and will always be kept so as far as practicable.

On the subject of acquisitions made during the past year, the Curator and Keeper, Mr. Robinson, remarks:—

"The collection, as in previous years, has been increased by acquisitions in almost every category, and the gradual accumulation of specimens has in many cases allowed of the formation of special series. One of the most interesting of these series is that of Mediæval and Renaissance sculpture, which now comprises upwards of 60 specimens, mainly of Italian sculpture in marble and terra cotta. Amongst the most important acquisitions during the year may be specified a "Lavello" or domestic fountain, in Istrian marble, upwards of 12 feet high, of early 16th century work, brought from a palace in Venice, and a large stone chimney-piece sculptured in the vigorous and beautiful style of the Cinque-cento, from the ancient palace of the Rusconi family at Como; these important architectonic monuments have been re-erected in the new galleries; also a triptych in 13th century Champlevé German enamel, from the Alton Towers Collection, and an ivory shrine or polyptych of the 14th century, both works of great value and interest."

60. The collection of objects selected from the Museum of Art, and circulated through the Provincial Schools, has been sent to various schools, chiefly in Ireland, during the past year, where it has been very numerously attended.

Mr. Robinson says, on this subject:—

"The Circulating Museum Collection has, during the year, visited six towns, and it may be noticed that a great increase in the average number of visitors shown by the year's return has taken place. In Ireland especially the number has been large, nearly 100,000 persons having visited the collection in the five Irish towns where it has been shown. It has now been in circulation during four years, has visited in all 22 localities, and the total number of visitors down to the end of the year 1858 has been 238,882. In a short time it will be necessary to revise the collection, and to substitute another and more extensive series of specimens."

61. In connexion with the Circulating Museum is the system of lending objects to Provincial Art Schools. This has been extended during the past year, and collections containing many valuable specimens have been lent to Sheffield, Birmingham, Bristol, Nottingham, where they have been exhibited in connexion with local collections, while twenty other places have received loans of less extent or value.

62. The loans to the Museum have increased in number during the past year, and the four large cases appropriated to their exhibition have been filled with a succession of such contributions.*

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* Loans to the Art Museum during 1858.

The Queen.—A collection of objects of Siamese workmanship, being presents from the King of Siam to Her Majesty, including a palanquin, a royal chair, gold-tissue robes, various gold enamelled utensils, &c.

The Marquess of Salisbury.—A series of cinque-cento Spanish or Italian crystal vases, spoons, &c., mounted in enamelled gold, and the silver-mounted case belonging to them.—A pair of silk stockings presented by Lord Hunsdon to Queen Elizabeth. Tippoo Sahib's sword, taken at Seringapatam.

The Earl of Ellesmere.—A collection of drawings and sketches by the Caracci, formerly in the Lawrence Collection.—A collection of portions of antique fresco paintings from the ancient baths and tombs of Rome.

The Earl of Wemyss.—Five Venetian glass mirrors.

The Governors of Bethlehem Hospital.—Two stone statues representing Raving and Melancholy Madness, by Cibber.

Captain I. Grant.—Marble statue, entitled "Greek Slave," by Hiram Powers.

M. Uzielli, Esq.—Marble statue of Venus, by Gibson.—Picture by Leys of Antwerp, Mary of Burgundy giving Alms to the Poor of Ghent.—Marble statue of Cupid by Spence.

Lionel Lucas, Esq.—Three original drawings of ornament by ancient masters.

Messrs. Jackson and Graham.—A carved and gilt cabinet, manufactured for the French Exhibition of 1855.

[*continued.*

63. Several gifts have also been received.*

64. A Collection of Illustrations of the British School of Engraving has been commenced, with the aid of a Committee of Engravers, consisting of Sir John Hippesley, Bart.; George T. Doo, R.A.; J. H. Robinson, Esq., and R. Redgrave, R.A., who have interested themselves in the promotion of this object. Various donations and loans have been received, and are acknowledged below (§ 68).

Circulating Art Library.

65. During the past year the Library has been open for 289 days, and has been more extensively used, both for reference and as a reading-room, than in any former year.

66. The total number who have visited it during *twelve* months has been 8,078; the numbers of subscribers being 420.

67. Nearly 500 volumes have been added to the collection, chiefly by purchase; and upwards of 1,300 prints and 600 photographs have been acquired, portions of which, as well as of the engravings, are used for exhibition in the Museum, or for circulation to Provincial Schools of Art. The total number of the books in the Library is now upwards of 6,000; and of drawings, prints, and photographs, upwards of 8,000.

68. Donations to the Library of books, engravings, photographs, &c., have been received from H.R.H. the Prince Consort; the Hon. the East India Company; J. Sheepshanks, Esq.; G. T. Doo, Esq.; M. D. Wyatt, Esq. J. James, Esq.; W. R. Wilde, Esq.; J. C. Robinson, Esq.

69. Sixteen of the Local Schools of Art have availed themselves of the privilege of borrowing books from the Central Library since permission was given about eighteen months since, and thus many valuable works have been circulated.

J. Moore, Esq.—Malayan krese mounted in gold.—An ancient glass ewer.

Edgar A. Bowring, Esq.—Inlaid metal box, containing autograph letters from the second King of Siam.

Her Majesty's Commissioners of Public Works.—Wrought iron gate, from the garden terrace, Hampton Court Palace.

* Objects presented to the Museum—1858.

H. R. H. the Prince Consort.—Ten statuettes in modern Berlin biscuit porcelain.—Modern Berlin porcelain ewer.

Rt. Hon Viscount Palmerston.—A Siamese gold mounted sword.

Rt. Hon. Lord Ravensworth.—Model of St. Peter's, Rome.—Model of St. Paul's Cathedral, London.

Mrs. J. C. Bruère.—A punkah, or Indian fan, from Kotah-Boondie.

Total Number of Visits to the Art Library since its opening has been as follows :—

Year.	Days.	Visits.	Average daily Attendance.	Total Number of Subscribers.
1853	292	4,425	15	For 12 months - 170
1854	248	7,942	32	„ 10 „ - 235
1855	245	7,242	30	„ 10 „ - 284
1856	168	5,846	32	„ 7 „ - 207
1857	113	3,455	31	„ 5 „ - 121
1858	289	8,078	28	„ 12 „ - 420

Collection of Architectural Casts, Drawings, &c.

70. The Collections of Architectural and Ornamental Casts and Models have received several important additions. To the Gallery occupied by the collection of the Architectural Museum have been added, at the expense of the Department, a careful cast of Archbishop Grey's monument in York Minster; a series of details from the Cathedral; and a collection of rubbings of brasses, some of which are exhibited in the Gallery.

71. Some re-arrangements have been made with the Classical and Rénaissance Casts, the property of the Department, in consequence of the suggestions of Messrs. Penrose, Donaldson, and Godwin, who were requested to report on the subject. These gentlemen observe in their report :—

"Looking to the terms of their Lordships' communication to us, we would refer to the fact that the Government building contains another large collection of architectural casts, mostly mediæval, known as the 'Architectural Museum,' which is under the management of a committee of the body of subscribers to whom it belongs. It is obvious that both collections will become more useful for public instruction if they be classified under the same system, and the specimens arranged in a like sequence, and we venture to hope that means will be adopted gradually to make the collection more perfect, and ultimately to add illustrations and characteristic examples of the use of the semicircular and pointed arch, vaultings, windows, &c., and to enlarge the sphere of illustration by specimens of eastern architecture.

"The country would then have at a comparatively small cost what has long been desired, *a national museum of architecture and architectural decoration* which could scarcely fail to be of the greatest service in an educational point of view, whether as affecting the progress of art in its noblest works or the improvement of taste in the application of art to the production of our manufactures."

72. Several interesting additions have been made to this collection. Among these may be mentioned elaborate models of St. Peter's, Rome, and St. Paul's, London, presented by Lord Ravensworth. The casts and models have been illustrated by a large series of original drawings, engravings, and photographs, framed, and hung in the corridor.

73. A systematic list of the whole series of casts for the purposes of labelling, both of the Architectural Museum and of the Government, is in course of preparation.

The Collection illustrating Construction and Building Materials.

74. The growth of this collection by donations from the public is much impeded for want of room. Capt. Fowke, R.E., the Director, reports:—

Some additional space having been devoted to this branch of the Museum, the entire collection has been re-arranged, and as far as possible classified with a view to its utility for immediate reference.

Considerable additions have been made during the year of raw material, such as building stones, marbles, rough and finished specimens, illustrations of the uses of serpentine and English alabaster. Numerous additional specimens of the application of ceramic ware, both to the construction and to the decoration of buildings, including some interesting Italian examples which have been procured by Mr. Cole.

The collection of models has been increased by the addition of several models of fireproof floors, of systems of ventilation, scaffolding, &c. In this branch may also be mentioned a very complete set of German models illustrative of timber framing for roofs of large span, and also models on a large scale of the roofs of the King's Cross Terminus as designed and as executed, contributed by Mr. Lewis Cubitt.

The section of sanatory arrangements continues to receive many valuable additions, and some samples of new materials are added from time to time, among these may be mentioned the patent fibrous slab, proposed to be used as a substitute for wood in many situations, and a new cement known as Scott's cement, which gives a material almost equal to Portland cement at little more than half the price.

A classified catalogue has now been completed of the entire collection, and with the object of increasing the value of the Museum of Construction in a practical point of view, arrangements have been made for binding up along with the catalogue,

circulars and price lists of the exhibitors, in the same manner as has been done with so good an effect in the Educational branch of the South Kensington Museum.

Educational Collection.

75. This collection has received large and valuable additions during the past year, almost exclusively on the principle of voluntary contributions for exhibition, from publishers and producers. In the period reported on the number of exhibitors has increased from 258 to 303; 2,105 volumes, and 450 models, maps, and diagrams have been added; and 1,293 persons have consulted the library of educational works. Of the latter, Mr. R. Thompson, the keeper, remarks that "A large proportion of readers have "been clergymen and schoolmasters from the country; the "greatest number of readers and persons otherwise re-"quiring to consult the collections have been during the "months of January and July, that is in the periods for "the Christmas and Midsummer holidays." The space at the disposal of the Department for the reception of these collections has been found to be insufficient for the rapid increase they have experienced. It is consequently impossible to exhibit properly all the contributions of exhibitors, although the tables placed in the bays for the convenience of students and readers have been used for purposes of exhibition.

76. At the close of 1858 the total number of educational books was 9,400; and of models, maps, diagrams, &c., 4,120.

Collection of Animal Products.

77. The formation of this collection was intrusted to Dr. Playfair, and by him carried almost to its present state. Since his resignation, during the year that has elapsed, the space set apart for the accommodation of the specimens has been found to be very inadequate to its requirements; and Mr. R. Thompson reports that offers of large and valuable additions to the Museum have been reluctantly declined, on account of the impossibility of making arrangements for their proper exhibition. The additions to the Museum therefore have consisted generally of objects necessary to complete several series of specimens (before in an imperfect state) of illustrations of the uses of animal products, and the processes of their application to manufactures. New series of these illustrations have not been commenced for the reasons before stated.

Collection of Objects used for Human Food.

78. Dr. Playfair at the suggestion of Mr. T. Twining, junior, originated this collection, and, with the aid of Mr. R. Thompson, the keeper, advanced it to an important place in the General Museum. Dr. Lankester, who is charged with the superintendence of this and the Animal Products collection, reports some of the results of last year's work, embracing the period before his appointment as well as afterwards, as follows :—

"Several new groups of food have been added, and their analysis exhibited to the eye by the aid of weighed quantities of their products, according to the system adopted by Dr. Playfair. A new division of the Museum has been commenced under the head of Animal Food, and the same system of analysis and arrangement has been pursued with regard to these as had been previously pursued with regard to the Vegetable Food.

"The importance of water as an article of diet, and the desirability of spreading a knowledge of the proofs of its salubrity or insalubrity and the means of purifying it, have led to the exhibition of specimens of water, and the various means that have been employed to purify it for dietetical purposes.

"A series of specimens have been exhibited of the various substances used for the adulteration of human food. These specimens have elicited great interest in the public, and there can be little doubt that such an exhibition is calculated to do much good, not only by instructing the public in the nature and effects of such adulterations, but by warning the fraudulent dealer that his practices are known and watched.

"An interesting addition has been made to the Museum in a collection of food from China, transmitted through his Excellency Sir John Bowring. This collection contains a variety of substances not used in Europe as food, and is not only instructive as throwing light on the habits of the Chinese, but in drawing attention to novel sources of food."

Collection of Models, &c., of Patented Inventions.

79. This collection is entirely under the control of the Commissioners of Patents. At their request a separate entrance to the collection was made during the past year.

Attendance at the South Kensington Museum.

80. The high rate of attendance at this Museum has been fully maintained during the past year. A monthly average of 38,000 has been maintained, and the total number of

visitors for the year ending 31st December 1858 has been upwards of 456,288, of whom 409,206 have attended on free days and 47,082 on students' days. The monthly average of the year 1855, the last complete year at Marlborough House, was under 7,000, and the total attendance for the year 1855, 78,427. The results obtained at South Kensington have proved conclusively that the distance from town is no impediment to the usefulness and attraction of the Museum, whilst the space and cleanliness of the site have been of the highest value. The statistics for the year will be found below:—

From 1st January 1858 to 31st December 1858.

——	Morning.	Evening.	Total.
Free Days	199,481	209,725	409,206
Students' Days :—			
Paying	30,107	. .	37,791
Passes	7,684		
Paying	. .	4,459	9,291
Passes	. .	4,832	
Total numbers in the day-time . . .		237,272	
Total numbers in the evening . . .		219,016	
General Total		456,288	
Monthly average in 1858 . .		38,024	

Public Lectures at South Kensington.

82. The lectures delivered at South Kensington at the expense of the Department are undertaken only in view of *National* objects. Hence they are prepared especially for, and addressed to those who are likely to impart to others the instruction thus obtained. Teachers and students are admitted at a nominal payment, and after they have been sufficiently accommodated the general public are admitted on payment of a remunerative fee. Two series of lectures have thus been delivered in the Theatre. The first course, which was explanatory of the objects of the Educational Collection in the Museum, was very numerously attended, and was especially addressed to students and masters of Training Colleges and Primary Schools, for whose benefit the course was chiefly arranged.

The statistics of the attendance are given in a note below.*

83. The second course was addressed to teachers and students of Art, on subjects connected with Art, including three lectures on pottery. The names of the lecturers, and the subjects of their lectures are given below.†

* South Kensington Museum.—Series of Lectures explanatory of the Objects and Designs of the Educational Division, November 1858 :—

School or College.	Address.	Number of Principals.	Pupil-Teachers.		Students.		Total at 6*d.*
			Male.	Female.	Male.	Female.	
Training College	Battersea	2	..	..	19	..	21
St. Mark's College	Chelsea	2	4	..	91	5	102
Royal Military Asylum	Chelsea	1	8	..	16	..	25
British and Foreign Model School.	Borough Road	..	..	..	14	1	15
British and Foreign Training School.	Borough Road	2	..	..	74	6	82
Home and Colonial	Gray's Inn Road	..	..	..	8	19	27
Catholic Training College	Brook Green, Hammersmith.	..	..	..	37	..	37
Wesleyan Training College	Westminster	2	1	..	7	1	11
Wesleyan Model School	Lambeth	..	..	..	2	4	6
National School	St. Pancras	..	..	..	..	4	4
" "	Stockwell	..	3	..	..	1	4
" "	Clapham	..	..	..	1	..	1
" "	St. Mathew's	..	..	..	..	1	1
" "	Notting Hill	..	..	..	1	..	1
" "	Hammersmith	..	..	..	1	..	1
" "	St. George's, Bloomsbury	..	..	..	1	..	1
" "	St. George's Road, Southwark.	..	..	..	..	1	1
" "	Limehouse	..	..	..	1	..	1
" "	Hoxton	..	1	..	..	..	1
National School	Battersea	..	..	..	1	..	1
" "	West Brompton	..	..	..	1	..	1
Parochial School	Kensington	..	..	..	..	5	5
Model School	Battersea	..	..	..	1	..	1
Parochial School	Wandsworth	..	..	..	1	..	1
" "	St. James'	..	..	..	1	..	1
School of Compassion	Drury Lane	..	..	..	6	..	6
Female Refuge	Fulham	1	..	..	..	7	8
Training School	South Kensington	..	..	..	3	1	4
Private Schools	. . .	..	6	6	1	12	25
Choristers' School	Westminster Abbey	..	..	..	5	..	5
Young Men's Christian Association.	Kensington	..	..	..	3	..	3
Miscellaneous	. . .	..	2	1	21	6	30
Artizans	. . .	..	..	..	8	..	8
		10	25	7	325	74	441

† First Series.

15th November.—*On Reading Aloud*, by the Rev. W. H. Brookfield, M.A., One of Her Majesty's Inspectors of Schools.

22nd November.—*On Plants as the ultimate Source of Food to Man*, by Dr. Lankester, F.R.S.

29th November.—*On the Classification and Geographical Distribution of the Class Mammalia*, by Richard Owen, Esq., F.R.S., &c.

6th December.—*On the Art of teaching Systematical Botany*, by Professor Lindley, Ph. D., F.R.S., &c.

13th December.—*On the Apparatus for teaching Mechanics in Schools*, by Professor Willis, M.A., F.R.S.

20th December.—*On Important Results by Simple Means* (a chemical lecture), by Professor Hofmann, Ph. D., F.R.S., &c.

PUBLIC SERVICES IN CONNEXION WITH THE DEPARTMENT.

84. The various inquiries of a scientific nature conducted by the institutions in connexion with the Department in London, Dublin, and Edinburgh are reported by their respective Directors in the Appendices.

85. The instruction in photography of the men of the Royal Engineers, stationed at South Kensington, has been continued and largely extended during the past year. Men of the corps, who have been so taught, have been sent, under the orders of the Secretary of State for War, to assist in the survey of the Turkish boundary in Bessarabia, and in that of the Isthmus of Panama, while several have been despatched to British Columbia with the Royal Engineers forming part of that settlement. Some of the results of the photographic instruction referred to have been given in the interesting series of photographs of Mr. Newton's excavations in Halicarnassus, in those of the towns and most remarkable edifices on the Turkish frontier, and in the views sent home from the force in China. Photographs from Lucknow of great interest, executed by Sappers trained in the Department, have also been received.

86. Photographs on the largest scale have been executed by Mr. Thurston Thompson from the cartoons of Raffaelle, which, with photographs from foreign collections hitherto inaccessible to the public, will be sold to the public at the lowest price to cover the cost.

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300 seats were reserved exclusively for schoolmasters, schoolmistresses, pupil-teachers, &c. ; who upon registering their names obtained tickets at 6*d.* each for the whole course. Tickets for the remaining 150 seats were issued at 3*s.* each for the course, or 6*d.* each lecture, when there happened to be room in the Theatre.

SECOND SERIES.

24th January.—I.—*On Hindoo Art*, as illustrated by the History, Drawings, Buildings, and Sculpture of the Hindoos, by Dr. G. Kinkel, formerly Professor of the History of Art and Modern Civilization in the University of Bonn.

31st January.—II.—*On Mohammadan Art*, illustrating the Influence of Byzantine Art on the Schools of the East, the development of the Arts of the Mahommadans in Egypt, Spain, and India, as seen in their Mosques and other Buildings and Decorations, by Dr. G. Kinkel.

7th February.—III.—*On Sculpture in Relief* (Rilievo), its Character and Application to Architectural Decoration, by Richard Westmacott, R.A.

IV. V. VI.—Three Lectures *on Ceramic Art*, illustrated by Specimens in the Museum of Art, by J. C. Robinson, F.S.A., Keeper of Art Collections, South Kensington Museum :—

14th February.—*On Ancient Greek painted Pottery.*

21st February.—*On the Italian Majolica Wares.*

28th February.—*On Porcelain Wares in General.*

250 seats were reserved exclusively for schoolmasters, schoolmistresses, and persons engaged in Art-teaching, who upon registering their names obtained tickets at 6*d.* each for the whole course of six lectures. Tickets for the remaining 200 seats were issued at 3*s.* each for the course, or 6*d.* each lecture when there was room in the Theatre.

87. Captain Fowke, R.E., was absent from the Department several weeks during the year, having been selected as the British Commissioner on the Danube Commission, and, under the authority of the Secretary of State for Foreign Affairs, has attended the consultations of the Commission in Paris, and reported fully on the navigation of the Danube. He has matured his plans for an Irish National Gallery, which is being executed by the Office of Works in Dublin, and the first stone of which has been laid by the Lord Lieutenant; and he has submitted plans for the new building about to be erected in Edinburgh for the Industrial Museum of Scotland, for which Parliament has voted an instalment of 10,000*l*. Captain Fowke has designed and superintended the erection of the galleries provisionally prepared for the reception of the Vernon and Turner pictures; and has made plans for alterations in the existing National Gallery building by which a great increase of accommodation would be gained with considerable saving of public money.

88. During the past year an exhibition of manufactures designed or executed by students of Art-schools in connexion with the Department has been organized, and opened to the public, at South Kensington. The collection was formed with the view of illustrating the action of the Schools of Art in aiding manufacturing industry throughout the country. The specimens exhibited were the work of 210 students, most of whom were taught in the present Art schools; a few were students of the old Schools of Design; and some were masters at the time engaged in the work of instruction. The exhibition was open for upwards of four months.

SUMMARY.

89. The results of the working of the Department of Science and Art in all its divisions for the year 1858 show a great increase on the previous year in the attendance of the public on the Museums, Schools, and Lectures. The visitors to the various Museums and Collections in London, Dublin, and Edinburgh under the superintendence of the Department, have been 875,898, being an increase of 117,923 on the previous year.

90. The principle of rendering the South Kensington Museum useful as far as practicable to institutions affiliated to it in all parts of the United Kingdom has continued in action. Numerous objects were lent for exhibition to Aston Hall, Birmingham, and the circulating collection of objects selected from the Art Museum has been exhibited at Aberdeen, Dublin, Limerick, Clonmel, and Waterford, and visited by 58,189 persons, showing an increase of 22,165 on the

numbers who visited the collection in six towns in 1857. At Dublin it was the means of stimulating the bringing together of a large number of valuable loans from private sources, and upwards of 1,072*l.* 2*s.* 3*d.* was received by voluntary payments on the occasion.

91. The returns from the Science institutions and schools (including those of Navigation), with the attendance on public scientific lectures, show the number of students to have been 68,212. The returns from all the Art Schools give a total number of 79,473 persons learning drawing, being an increase of 83 per cent. on those of 1857. The quality of the instruction has never been so high as at present, whilst the average cost of the State assistance for each person taught drawing is being lessened year by year; for in 1858 it had decreased to 10*s.* 1¼*d.* each person; in 1857 it was 13*s.* 1¾*d.*; while in 1851, before the present system of the Department was adopted, it was as high as 3*l.* 2*s.* 4*d.* each person. This estimate includes the annual cost of the Ornamental Art Museum, and all the items chargeable on Art-Instruction.

92. Grants towards the purchase of examples, diagrams, and apparatus for instruction in science and art, have been made on 10 requisitions from science schools, 89 from art schools, 29 from mechanics' and other institutions, and 237 from public schools for the poor.

93. Great numbers continue to attend and prove the accessibility of the Central Museum at South Kensington. They also prove the eagerness of the public to avail themselves of the opportunities which it affords for instruction in its several divisions. The total number who have visited the Museum in the past year has been 456,288, of whom 219,016 persons, chiefly of the operative class, have attended in the evenings, apparently enjoying that privilege very much.

94. We can state with confidence that at no period since the Department has been founded has its condition and working been so sound, or the public appreciation of the advantages which it offers in aid of private efforts to promote Science and Art among all classes, so marked as during the year 1858.

All which is most humbly submitted to Your Majesty.

South Kensington, dated this 17th day of June 1859.

(Signed) Gascoigne Salisbury.
C. B. Adderley.

APPENDICES.

APPENDICES.

APPENDIX A.

ANNUAL REPORT of the DIRECTOR-GENERAL of the GEOLOGICAL SURVEY of the UNITED KINGDOM, the MUSEUM OF PRACTICAL GEOLOGY, and the GOVERNMENT SCHOOL OF MINES AND OF SCIENCE APPLIED TO THE ARTS.

Geological Survey of the United Kingdom.

THE results of the labours of the surveyors, under the direction of Professor Ramsay, during the last year have equalled those of the preceding year, and would have exceeded them but for the severe illness of two efficient surveyors.

Maps on the one-inch scale, relating to an area of about 1,238 square miles, have been published, whilst six sheets of a compendious map, on the scale of four inches to a mile, comprising all Wales and the bordering English counties, have also been brought out. These last-mentioned maps were planned by my predecessor Sir H. De la Beche, and have been executed under the direction of Professor Ramsay. Including all the "Silurian region," they exhibit an ascending order from the lowest rocks of England and Wales up to the secondary deposits, and thus, when united in one map, present an accurate reduction of the larger and more detailed survey, which may be consulted by geologists of all nations as a clear exposition of the best types of the older or palæozoic formations.

The area surveyed in England consists in all of 2,273 square miles. Of this superficies, 1,477 miles have reference to the cretaceous and tertiary rocks of Kent, Sussex, Surrey, Hampshire, Wiltshire, and South Berkshire. In the counties of North Berkshire, Oxford, Bucks, Northampton, and Warwick, 731 miles of Tertiary, Cretaceous, and Oolitic formations have been completed, whilst in Lancashire 65 miles of coalfield are finished off.

In Scotland as much advance has been made as is compatible with the very small force of surveyors employed in that country when compared with the force engaged in the survey of England and Ireland. For, whilst England has eight surveyors, and Ireland also eight, including the Local Director, Scotland possesses but two surveyors. Now, when it is considered that in Scotland all the field surveys are first laid down upon the Ordnance Maps of the six-inch scale, and that those maps relating to the vast region south of the Grampians are already published or in preparation (many of them having been already reduced to the one-inch scale), it is obvious that the Geological Survey of North Britain will be left infinitely in arrear of that of the other portions of the United Kingdom, if a considerable augmentation of the force be not granted. The necessary actual result is, that whilst in the past year 2,273 square miles have been surveyed in

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England, 203 square miles only have been surveyed in Scotland. (See accompanying Index Maps A. and B).

In few areas of the same size is there a greater amount of mineral wealth than in the country which lies between the Firths of the Forth and the Tay on the east, and the Firth of the Clyde on the west. This tract, consisting to a great extent of strata rich in coal and iron, diversified by having been penetrated by various igneous rocks, and often covered by débris, requires very close and accurate research. Considering, then, these circumstances, the two surveyors employed, aided as they have been by the occasional supervision of Professor Ramsay, have effected as much as was practicable. The complexity of this important region is well set forth in the Geological Sheet, No. 32, on the one-inch scale, which has been finished, and which, ranging over parts of the counties of Edinburgh, Haddington, Peebles, and Fife, includes the Scottish metropolis in a map which has been reduced from sixteen sheets of the six-inch scale.

Several sheets on the six-inch scale have been surveyed of other parts of the counties of Peebles and Fife, &c., and the publication of the map of Haddingtonshire, which has been for some time prepared, is alone deferred from the want of an Ordnance map of the conterminous tract on the south.

As the proprietors of mining tracts will naturally wish to see published geological maps on the six-inch scale from the tracings prepared by the surveyors, I may state, that it is in contemplation to engrave and publish several maps of the Mid Lothian coalfield on that scale; and even if this plan should not be extended to the whole of the great mineral trough of Scotland, all the six-inch maps may hereafter be consulted in the Geological Map Office in Edinburgh, which will form part of the Industrial Museum of Scotland.

The unusually large number of ten sheets of horizontal six-inch sections, extending in linear measurement over 326 miles of country, have been published in the last year. These sections give the various relations of strata of the following ages:—Silurian, Carboniferous, Permian, Triassic, Cretaceous, and Tertiary, in areas ranging from Derbyshire and Cheshire on the north, to the Isle of Wight on the south; the structure of the younger deposits of the Isle of Wight having been explained in a detailed vertical section.

The quantity of maps and sections in preparation for publication is considerable, and the sale of them has been highly satisfactory, exceeding by 456 sheets that of the preceding year. (See Table VI.)

A summary of the general results as regards Great Britain, irrespective of collections of rocks and fossils (of which hereafter) will be found in the accompanying table and index maps, prepared by Professor Ramsay. Of the latter, A. shows the state and progress of the survey of England, and also indicates the area contained in the new map of Wales, on the scale of four miles to one inch; and B. shows the state and progress of the survey in Scotland.

Ireland.—Hitherto the labours of the Irish surveyors, under the direction of Mr. J. Beete Jukes, have been chiefly confined to tracing upon the six-inch maps both the outline of the different formations and the outcrop of the strata in detail, particularly in the mountainous tracts of the south-west of Ireland. Now, however, that the Ordnance maps on the one-inch scale are being fast issued to the public, it has been found necessary to check, to some extent, any new field work, in order to condense, collate, and reduce for publication, on the smaller scale, those data which have been for several years registered on the six-inch map.

Whilst, then, the field survey, though more limited than in previous years, has made some progress in the counties of Tipperary, Clare, Limerick, Kilkenny, and Queen's County, the publications on the one-inch scale have been vigorously pushed forward, and as many as twenty-three new sheets have been issued in the past year; thus making the total number published forty-four sheets. (See coloured Index Map D.)

Seventeen sheets are in the engraver's hands, of which some are nearly ready for colouring, and thirteen others have been prepared by the surveyors for the engravers.

In accordance with my directions, printed explanations have been published of four of the new sheets, in pamphlets of twenty to thirty pages each, containing descriptions of the physical geography, striking geological features, and of typical localities. These fasciculi would, it was believed, give much additional interest to the maps, but the price affixed to them by the Stationery Office is so high as to have prevented any sale whatever of them. The maps, however, are selling well, 294 copies having been disposed of in the past year.

All that portion of the Index Map C. which is coloured, shows the space from south to north over which it is proposed to render the six-inch geological field surveys complete before any other pause be made in that work; and a plan of systematic operations, suggested by Mr. Jukes, will be followed out, by which each freshly issued sheet will be accompanied by its printed explanation; and thus preparation will be regularly made for the ultimate publication on the reduced scale without subsequent revisions.

Considerable additions have been made to the Museum in Dublin, both in rock specimens and fossils, the latter having been arranged and named by Mr. Baily.

Natural History Branch of the Survey.—Following up the labours which were last year specially marked by the selection, naming, and distribution of the twenty-two sets of duplicate fossils which were sent to numerous public institutions, Professor Huxley and his assistant, Mr. Etheridge, have been actively employed both in re-arranging and re-tabletting the specimens in the Museum, and in preparing the cases for the issue of a printed catalogue of their contents. Numerous secondary and tertiary specimens, which had for years been accumulating in the building, have been examined and named, 3,500 of these specimens having been placed in the Museum. When the same operation shall have been accomplished by Mr. Salter in respect

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to the Palæozoic fossils, which it is hoped, may be worked out during the ensuing year, the whole Museum will be in a condition to receive its appropriate catalogue, which will make known to the public the amount of the British fossils, and at the same time guide the Curator in his endeavour to fill up the blanks in the collection.

When this complete clearance of the accumulation shall be made, it is obvious that it will then be possible to effect a permanent arrangement of the fossils in the cases, to refer students to the palæontological basis of the work of the survey, *i. e.* to the particular specimens on which the determination of the rocks in any mapped district depends; and, further, to display those fossils which have been made the subjects of illustration in the Memoirs of the Survey.

In reporting that a total of 10,798 specimens have, during the past year, been tabletted and placed in the cases of the Museum, Professor Huxley observes that the donations have been unusually liberal; including collections of Crag fossils, presented by Mr. Searles Wood; of Eocene shells, presented by Rev. J. Compton; and of fossil fishes of the Old Red Sandstone, presented by the Director-General.

By purchase we have acquired the fine series of Crinoids lately belonging to Mr. Austin, and the large collection of Wealden and other fossils of the South-east of England made by Mr. Hills.

The Palæontologist, Mr. Salter, whose labours apply exclusively to the Palæozoic rocks, has named in the last year 4,887 specimens, including 503 of foreign origin. Of these, about 2,000 have been placed in the Museum. His time has been greatly taken up in reducing the unworked Silurian collections, with a view to the formation of complete catalogues of the fossils of that age. He has further examined coast sections in East Lothian and Fife in company with Professor Ramsay, has corresponded with various local collectors at home and abroad, who have contributed new species to the collection, which he has named, has given his usual demonstrations to the pupils of the school, and, as will hereafter be noticed, has co-operated with Professor Huxley in publishing a Monograph on the genus *Pterygotus*, referred to in the report of last year.

Museum and Library.—Lists of the donations to the Museum and Library are appended (III. and IV.). They are, as usual, numerous, and are evidences of the continued interest taken by the public in this institution.

The number of visitors during the year amounted to 24,877, which exceeds that of the past year by 7,680.

The Explanatory Catalogue of the Rock Specimens, and the Descriptive Guide to the whole contents of the Museum, have been sold off, and the amount derived from the sale, 39*l.* 9*s.* 6*d.*, has been paid into the Exchequer. New and revised editions of them are now preparing.

Mining Records.—The labours of Mr. Robert Hunt in the past year have been as productive as on former occasions, notwith-

standing the late mercantile depression, which necessarily threw difficulties in the way of obtaining accurate returns from mining proprietors. These returns are rapidly becoming a text-book for all metal merchants, miners, and metallurgists, such parties having borne repeated testimonials to that effect.

The records of former and present subterranean operations have been increased (see Return II.) to the extent of 173 documents, including plans and sections of mines and collieries; and it is satisfactory to know that applications to the Mining Record Office are not unfrequent to obtain special information from the registered plans and sections of old workings, without consulting which new adventures could not safely be made.

The small sums granted for the payment of the copying and registering of such plans is, I regret to say, reported by the Keeper to be quite inadequate to provide his office with many of the requisite data. With a laudable desire to add to the valuable tables of statistics already published, Mr. Hunt had prepared a list of numerous quarries of stone and slate in Great Britain, explanatory of their localities, proprietors, and the use and cost of the materials. Perceiving, however, that these documents required to be extended and methodized, and that the proper geological age and lithological character of each stone should be accurately and fully enumerated when issued from the Government Geological Survey, I have set on foot inquiries which will enable him to put forth next year an useful Memoir on that head.

It is also to be noted, that the Board of Trade has required and has been furnished with tables of the quantities and estimated value, at the place of production, of the principal minerals and metals produced in the United Kingdom in the years from 1854 to 1856 inclusive, and that the tables have been printed in the Miscellaneous Statistics of the United Kingdom.

School of Mines.

The number of students who have entered for the present Session (1858–59) amounts at this time to sixty-seven, and the following Table, in continuation of that given in last year's report, will show the progress of the school since its establishment in 1851.

	Matriculated and Free Students for Two or Three Years' Study.	Occasional Students for Special Courses only.	Total.
Session 1851–2 - -	15	49	64
„ 1852–3 - -	14	50	64
„ 1853–4 - -	18	47	65
„ 1854–5 - -	16	48	64
„ 1855–6 - -	17	54	71
„ 1856–7 - -	9	45	54
„ 1857–8 - -	11	68	79
„ 1858–9 - -	12	55	67

It is to be regretted that the attendance of the occasional students at the School of Mines is diminished this year by the

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absence of officers of Her Majesty's army and navy, notwithstanding the encouragement of H.R.H. the Commander-in-Chief, and the advantageous terms upon which such students are admitted to the lectures.

The following courses of lectures were delivered to the working men during the past Session, in the three first of which all the tickets (1,800) were applied for; but in the last course, which was delivered in May and June, only 442 tickets were issued out of 600; thus showing that these lectures cease to be attractive during the long summer evenings. The lectures for this Session have, consequently, been commenced at an earlier period.

1st course,	On Electricity and Magnetism	-	by Professor Stokes.
2nd „	The First Principles of Chemistry	-	by Dr. Hofmann.
3rd „	Metallurgy -	-	by Dr. Percy.
4th „	Minerals -	-	by Mr. W. W. Smyth, M.A.

The following returns give the amounts paid into the Exchequer deducted from the admission fees of the students, the larger portion of which is paid to the professors.

	£	s.	d.
1854–55 - - -	84	8	7
1855–56 - - -	90	15	5
1856–57 - - -	57	13	5
1857–58 - - -	64	12	6

Chemical Laboratory.—Dr. Hofmann supplies the following return of the number of students who have attended the laboratory of the school during the past year:—

	1857.	1858.
Spring session - - -	44	33
Summer „ - - -	33	27
Winter „ - - -	39	34
	116	94

Dr. Hofmann and his assistants have carried on, as in former years, analyses of direct use to the public. Thus, an examination of the amount of bituminous matter in certain shales, particularly those of the flagstones of Caithness, have now been so accurately determined that, in addition to the very durable character of those flagstones, oil and gas may possibly be obtained from parts of these rocks in sufficient quantities to render them really valuable to enterprising speculators.

An investigation has been made of the relative properties of the various copper wires used by the Transatlantic Telegraph Company; and experiments have been undertaken at the request of the Board of Trade with a view of discovering an easy and inexpensive method of bleaching the inferior qualities of resins for soap boiling. Besides these practical inquiries, in which must be included the analyses of mineral waters, several Memoirs of a purely scientific nature have been published in the Proceedings and Transactions of the Royal Society, all of which have resulted

directly from experiments made in the laboratory of the Royal College of Chemistry, which is a portion of the School of Mines. Now, it is not to be forgotten that some of these researches are also highly important for the practical purposes of this institution. They not only afford a powerful means of mental training, but often lead to useful results. Thus, an oily substance called aniline remained for many years without any practical application. This body has the property of yielding, with oxidizing agents, a beautiful violet colour, which has served chemists as a test of the presence of aniline. After many ingenious trials, Mr. W. Perkins, one of Dr. Hofmann's pupils, derived from this base a fixed and permanent violet coloured substance of great value to dyers and printers, and hence thousands of gallons of aniline are now produced, some ounces of which a few years ago would have been considered a rarity in any chemical laboratory. Dr. Hofmann observes that the students who have worked under his superintendence during the past year belonged to all classes of society, and very different countries. Among the foreigners are Frenchmen, Germans, Spaniards, Americans, and Turks.

Metallurgical Laboratory.—Dr. Percy gives the following return of students attending this laboratory :—

	1857.	1858.
Spring session - -	7	6
Summer „ - -	8	5
Winter „ - -	6	6
	21	17

Numerous analyses of ores and minerals have been made, amongst which I may mention various analyses of iron ores published in the second part of the "Iron Ores of Great Britain." Analyses of coal from the Straits of Magellan have been made and reported on to the Admiralty. Applications continue to be received from time to time, from various quarters, for the services of men well informed on the principles of metallurgical science, and Dr. Percy expresses his satisfaction in being able to report that many of his former students are now occupying important and remunerative situations, both at home and abroad. The demand, indeed, has exceeded the supply.

Lectures in connexion with the British Museum.—Professor Owen, the Superintendent of the natural history department of the British Museum, has, in the performance of his duty, delivered a course of twelve lectures in the theatre of this school on fossil birds and reptiles. These lectures have been attended by large audiences. Professor Melville, of Queen's College, Galway, having been appointed by the Trustees of the British Museum to the Swiney Professorship, (which is tenable for three years, and must be held by a M.D. of the University of Edinburgh,) has been permitted to deliver in the theatre a course of twelve lectures on geology. The public is admitted free to the last mentioned lectures, which were illustrated by numerous and instructive

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diagrams, and the attendance was good. These lectures will be repeated this Session.

Printed Works.—The works published during the year have been as follows:—

Geology of parts of Wiltshire and Gloucestershire, to illustrate Sheet 34 of the Geological Maps, by A. C. Ramsay, F.R.S., W. T. Aveline, F.G.S., and Edward Hull, F.G.S; a Monograph on the genus *Pterygotus*, by Professor Huxley and Mr. Salter; a Catalogue of the contents of the Mining Record Office, by Mr. Robert Hunt; Mineral Statistics for 1857, by Mr. Hunt; Part II. of the Iron Ores of Great Britain, containing the Iron Ores of South Staffordshire, by Mr. J. Beete Jukes, Dr. Percy, and his assistants.

In mentioning these publications it is satisfactory to add that the first editions of the Catalogue of the Rock Specimens, and the Descriptive Guide to the Museum, which were alluded to in the last report, have been already sold off, and are now in the course of being revised and reprinted. The fasciculi descriptive of the maps, the statistics of the mining produce, and the report on the iron are also appreciated highly by the public, the first part of the last-mentioned report being already out of print. The Monogragh on the remarkable genus of fossil Crustacea, the *Pterygotus*, which so well defines a great geological horizon of the oldest rocks, will, I doubt not, occupy a high place in the records of natural history.

In concluding this report I may state that, as in former years, various applications from public offices relating to questions of geology, &c., have been answered and explained. In reply to a request from the Secretary of State for the Colonies, to recommend a geological surveyor of Tasmania, I sent in the name of Mr. Charles Gould, who had distinguished himself in the School of Mines, and who, by his subsequent practice as a field surveyor, is well qualified to undertake the task. This gentleman has been appointed. In this, as in previous similar cases, the colonial surveyor is furnished by me with the instructions suited to the country which he is called upon to examine.

At the desire of the Secretary of State for India, I have recommended a person competent to report upon the value of soils in Madras; and to the same authority I have reported the results of an examination in the Metallurgical Laboratory by Dr. Percy, of the graphite which occurs in large quantities at Travancore.

At the desire of the Lords of the Admiralty, an analysis has been made of coal from the Straits of Magellan, which Dr. Percy reports to be valuable.

In reply to an inquiry made by the Secretary of State for Foreign Affairs, a memorandum has been sent for the guidance of the Government of Tripoli, in relation to proposed artesian wells in that country.

The Secretary of State for War having requested me to act as chairman of a committee to inquire into the accuracy attained in reducing large plans of the Ordnance Survey to the size of maps by means of photography, as practised by Colonel James, the superintendent of H.M. Map Office, a report entirely approving that process has, after a strict scrutiny, been made and signed by Mr. J. Locke, M.P., Professor W. H. Miller, Captain Washington, R.N., Colonel Dawson, C.B., R.E., and myself.

Mr. Bristow, one of the senior geologists, with a view to advance the science of geology, has prepared, at my request, an accurate and detailed plan of the relations, altitude, and dimensions of a remarkable bone cave at Brixham, in Devonshire. He has also called my attention to the lamentable result of erecting certain portions of forts and public buildings on incoherent and slippery tertiary subsoils, which necessarily shrink or collapse, or swell out and founder, under decomposition and pressure. On this last head I would submit that the military authorities should obtain the opinion of an experienced geological surveyor whenever such buildings are about to be raised, in order that the real nature of their foundations should be previously ascertained.

In reverting to the observations made in the first page, respecting the inadequacy of the field force, consisting of two surveyors only, in Scotland, I have to express my regret that a number of officers at least equal in amount to the whole of those now employed in Great Britain should not be actively engaged in England alone. For, although the large tracts extending northwards from Manchester to the banks of the Tees, which enclose some of the richest mining fields in the kingdom, are now provided with maps on both the six and one inch scales, and are therefore quite ready for the operations of the geologist, it will be impossible for years to come to satisfy the demands of the mining proprietors and lay down the geological features of such districts without some such increase of force.

In the meantime, seeing the increasing demands from civil engineers and the public for a correct representation of the relations of the strata beneath London and its environs, it is obvious that no portion of the force at present employed in the South-Eastern Counties can be withdrawn; on the contrary, it will be my duty to concentrate, as far as possible, the operations of the survey during the next two or three years upon the metropolitan district alone, with a view to the settlement of the important subjects of the water supply, drainage, and sewerage of this densely-peopled tract.

Roderick I. Murchison,
Director-General.

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GEOLOGICAL SURVEY

TABLE I.—RETURN OF WORK done

One-inch Maps.	Six-inch Maps.	Hor. Sec. Sheets.	Ver. Sec. Sheets.	Counties.	Formations.
Nos.	Nos.	Nos.	Nos.	ENGLAND.	
3	...	...	...	Kent . . .	Chalk and lower tertiary.
5	...	...	...	Sussex . .	Hastings sand, Weald clay, & cretaceous.
6	...	...	...	Kent, Surrey, and Sussex.	Ditto . .
7	...	...	...	Berks, Oxon, Bucks	Lower tertiary and Chalk.
8	...	...	...	Surrey and Hants	Lower greensand. Additional subdivisions added.
9	...	...	...	Surrey and Sussex	Wealden and cretaceous.
11	...	...	...	Sussex and Hants	Chalk and lower tertiary.
12	...	...	...	Hants, Wilts, and Berks.	Cretaceous & lower tertiary.
13	...	...	...	Wilts, Berks, and Oxon.	Ditto . .
34 & 44	...	...	...	Wilts & Gloucester	Oolites and Cretaceous rocks.
45 S.W.	...	...	...	Oxon and Berks .	Lias and lower and middle Oolites.
45 S.E.	...	...	...	Oxon and Bucks .	. . .
45 N.W.	...	...	...	Oxon, Northampton, and Warwick.	Lias and lower Oolites.
45 N.E.	...	...	...	Oxon, Northampton, and Bucks.	Ditto . .
53 S.E.	...	...	...	Northampton .	Ditto . .
53 N.E.	...	...	...	Northampton, Warwick, and Leicester	Ditto . .
63 S.E.	...	...	...	Leicester & Northampton.	Ditto . .
71 N.E.	...	...	...	Nottingham .	Permian and New Red Sandstone.
80 S.E.	...	...	...	Cheshire . .	New red marl .
80 N.W.	...	...	...	Lancaster and Chester.	Coal-measures, Permian, and new red sandstone.
82 S.E.	...	...	...	Nottingham .	Permian and New Red Sandstone.
89 S.W. & S.E.	84, 85	...	...	Lancaster . .	Coal-measures and New Red Sandstone.
Carried forward					

OF GREAT BRITAIN.

during the Year ending December 1858.

Maps. Area published, 1858.	Maps. Area surveyed, 1858.	Maps. Area preparing for Engraver and engraving.	Horizontal Sections published.	Vertical Sections published.	Horizontal Sections engraving.	Horizontal Sections levelled.
Sq. Miles.	Sq. Miles.	Sq. Miles.	Sheets.	Sheets.	Sheets.	Miles.
...	9	...	...	...	...	...
...	284	...	...	...	...	...
...	281	...	...	...	...	...
...	12	...	...	...	...	...
...	136	...	...	...	...	...
...	150	...	...	...	...	...
720	72	...	...	...	...	...
...	315	...	...	...	...	...
...	424	720	...	...	...	...
...	...	...	...	...	...	44½
...	120	176	...	...	...	...
...	6	...	...	...	...	...
...	157	176	...	...	...	...
...	25	...	...	...	...	...
...	127	176	...	...	...	...
...	90	176	...	...	...	...
...	...	176	...	...	...	...
174	...	...	...	...	...	...
170	...	...	...	...	...	...
...	...	168	...	...	...	...
174	...	...	...	...	...	...
...	65	...	...	...	...	...
1,238	2,273	1,768	...	...	...	44½

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TABLE I.—RETURN of WORK done during

One-inch Maps.	Six-inch Maps.	Hor. Sec. Sheets.	Ver. Sec. Sheets.	Counties.	Formations.
Nos.	Nos.	Nos.	Nos.	SCOTLAND.	
				Brought forward . . .	
24	5	...	...	Peebles . . .	Old Red Sandstone, Carboniferous and igneous rock.
...	6	...	...	Ditto . .	Carboniferous .
	1	...	...	Ditto . .	Old Red Sandstone and Carboniferous rock.
	2	...	...	Ditto . .	Ditto . .
	3	...	...	Ditto . .	Silurian and carboniferous.
	4	...	...	Edinburgh . .	Carboniferous .
	5	...	...	Ditto . .	Ditto . .
	9	...	...	Ditto . .	Ditto . .
32	10	...	...	Ditto . .	Ditto . .
	11	...	...	Ditto . .	Ditto . .
	15	...	...	Ditto . .	Ditto . .
	16	...	...	Ditto . .	Ditto . .
	17	...	...	Ditto . .	Ditto . .
	35	...	...	Fife . . .	Ditto . .
	36	...	...	Ditto . .	Ditto . .
	38	...	...	Ditto . .	Ditto . .
	39	...	...	Ditto . .	Ditto . .
	40	...	...	Ditto . .	Ditto . .
	7	...	...	Ditto . .	Ditto . .
	11	...	...	Ditto . .	Ditto . .
41	12	...	...	Ditto . .	Ditto . .
	13	...	...	Ditto . .	Ditto . .
	20	...	...	Ditto . .	Ditto . .
	27	...	...	Ditto . .	Ditto . .
				English Sections.	
79 S.W. S.E., 80 S.W.	...	43	...	Denbigh, Flint, and Chester.	Silurian, Carboniferous Limestone, Coal-measures, & New Red Sandstone.
73 N.W. 74 N.E.	...	44	...	Salop, Chester, and Stafford.	Silurian, Carboniferous Limestone, Coal-measures, Permian, and New Red Sandstone.
61 N.E. 62 N.W. N.E. 73 S.W.	...	45	...	Salop and Stafford.	Coal-measures and New Red Sandstone.
63 N.W. N.E. 71 S.W.	...	46	...	Leicester . .	Cambrian rocks, Coal-measures, & New Red Sandstone.
Carried forward					

the Year ending December 1858—*continued.*

Maps. Area published, 1858.	Maps. Area surveyed, 1858.	Maps. Area preparing for Engraver and engraving	Horizontal Sections published.	Vertical Sections published.	Horizontal Sections engraving.	Horizontal Sections levelled.
Sq. Miles.	Sq. Miles.	Sq. Miles.	Sheets.	Sheets.	Sheets.	Miles.
1,238	2,273	1,768	...	...	...	44½
...	18	...	...	...	...	...
...	3	...	...	...	...	...
...	3	...	...	...	...	...
...	5	...	...	...	...	...
...	1	...	...	...	...	...
...	8	...	...	...	...	...
...	5	...	...	...	...	...
...	5	...	...	...	...	...
...	23	...	...	...	...	...
...	12	...	...	...	...	...
...	4	...	...	...	...	...
...	18	...	...	...	...	...
...	2	...	...	...	...	...
...	6	...	...	...	...	...
...	12	...	...	...	...	...
...	5	...	...	...	...	...
...	15	...	...	...	...	...
...	4	432	...	...	...	...
...	2	...	...	...	...	...
...	3	...	...	...	...	...
...	20	...	...	...	...	...
...	10	...	...	...	...	...
...	17	...	...	...	...	...
...	2	...	...	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	...	...	...	...
1,238	2,476	2,200	3	...	...	44½

Appendix A.

REPORT OF DIRECTOR-GENERAL OF THE GEOLOGICAL SURVEY, &c.

TABLE I.—RETURN of Work done during

One-inch Maps	Six-inch Maps.	Hor. Sec. Sheets.	Ver. Sec. Sheets.	Counties.	Formations.
Nos.	Nos.	Nos.	Nos.		
				Brought forward . . .	
10, 11	...	47	...	Hants and Isle of Wight.	Cretaceous and Tertiary strata.
62 N.E. 63 N.W. N.E. 71 S.E.	...	48	...	Stafford, Leicester, and Northampton.	Cambrian rocks, coal-measures, New Red Sandstone.
62 S.E. N.E. 63 S.W. N.W. 71 S.W.	...	49	...	Stafford, Leicester, and Derby.	Coal-measures, New Red Sandstone.
55 N.E. 54 N.W. N.E. 62 S.E. 63 SW.	...	50	...	Worcester, Warwick, Stafford, and Leicester.	Coal-measures, Permian, New Red Sandstone.
54 N.E. 62 S.E 63 S.W.	...	51	...	Stafford and Warwick.	. . . .
10	...	...	27	Isle of Wight .	Lower Tertiary or Eocene strata.
62 N.E. 63 N.W. N.E. 71 S.W.	...	52	...	Stafford, Leicester, Derby, Nottingham.	Coal-measures, New Red Sandstone, &c.
60 N.E. 61 N.W. S.E. 62 S.W. 73 S.W.	...	53	...	Salop and Stafford.	Silurian, Coal-measures, Permian, and New Red Sandstone.
61 N.E. S.E. 62 N.W. S.W	...	54	...	Ditto . .	. . . .
71 S.W. N.W. 72 N.W. 73 N.E.	...	55	...	Derby, North Stafford, Leicester.	Carboniferous limestone, Coal-measures, Permian, & New Red Sandstone.
16, 17	...	55	...	Dorset . .	Portland, Perbeck, Cretaceous, and Tertiary beds.
72	...	57	...	Derby and Stafford	Carboniferous rocks, Permian, New Red Sandstone, &c.
Total					

the Year ending December 1858—*continued.*

Maps. Area published, 1858.	Maps. Area surveyed, 1858.	Maps. Area preparing for Engraver and engraving.	Horizontal Sections published.	Vertical Sections published.	Horizontal Soctions engraving.	Horizontal Sections levelled.
Sq. Miles.	Sq. Miles.	Sq. Miles.	Sheets.	Sheets.	Sheets.	Miles.
1,238	2,476	2,200	3	...	...	44½
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	1	...	...	...
...	...	...	...	1	...	...
...	...	...	...	...	1	...
...	...	...	...	...	1	...
...	...	...	1	...	...	...
...	...	...	...	...	1	...
...	...	...	...	...	1	...
1,238	2,476	2,200	10, 326 miles	1	5, 155 miles	44½

ANDREW C. RAMSAY,
Local Director for Great Britain.

Appendix A.

II.

REPORT OF DIRECTOR-GENERAL OF THE GEOLOGICAL SURVEY, &c.

DOCUMENTS added to the COLLECTION of the MINING RECORD OFFICE during the Year ending December 1858.

1. Plan of Old Huel Darlington.
2. do. West Huel Darlington.
3. Section of the Cumberland iron district.
4. Plan of the Laxey Mines.
5. Section of do.
6. Surface plan of Huel Sisters.
7. Plan of workings, Huel Mary Ann.
8. do. do. Wrey Consols.
9. Plan of underground workings, Bodelwyddan.
10. Plan and section of Woodhead Lead Mine.
11. Mostyn Colliery (showing the dip of the coal).
12. Bychton Colliery, ⅔ seam.
13. Plan of Bagilt Colliery district.
14. Bagilt Colliery, workings from 1830 to 1840.
15. do. do. 5 feet seam, 1849.
16. do. do. 2 yard seam, 1851.
17. Lloc Lead Mine, plan of workings.
18. Pen-y-Bryn Lead Mine, plan.
19. do. do. section.
20. Mostyn Colliery, plan of five yard seam.
21. do. plan of Cannel coal seam.
22. Paul's plan of ventilating collieries.
23. Huel Trelawney, plan of.
24. Ruby and Garlidna, plan.
25. General section from Bigrigg to Eskett, Whitehaven.
26. Section of J. Peile & Co.'s Mine, Whitehaven.
27. do. Ainsworth ore do. do.
28. Faults in Crow-Garth Mine.
29. Plan of Todhole's Mine.
30. Group of faults in Frizington iron district.
31. Section of Frizington Parks No. 3 pit.
32. Faults in Winder Royalty, Whitehaven.
33. Section of pits in Eskett Royalties, Whitehaven.
34. Plan of Dolcoath mining district, Camborne.
35. Section of well at Cheddington.
36. Grange Lane Colliery, Silkstone seams, 1857.
37. Plumbley Lane do. do. do.
38. Intake Old do. do. do.
39. Coalbrook do. Barnsley bed, do.
40. Woodhouse Junction Colliery, Barnsley bed, 1857.
41. Handswork Old Pits do. do.
42. Sinkings of strata in Barnsley district.
43. Plans of Ecton mineral field.
44. Ecton, Clayton, and Waterbank Mines.
45. Ecton Hill and Clayton Mines, section.
46. Section east and west of Ecton.
47. Prosperous and Stoney Groves Mines, Yorkshire.
48. Plan of Lee Moor Clay Works.
49. Darley Main Colliery, plan on "Mainhard coal."
50. Manor Collieries, do. "Old Park Gate bed."
51. Soaphouse and Castle Pits, plan on "Silkstone bed."
52. Mickley Colliery, do. "Chorlton Brook bed."
53. Woodend Colliery, do. "Gamister bed."
54. Puley Hill Colliery, do. "Whin Moor bed."
55. Arigna Iron Mines, section of workings.
56. Tyne and Wear Collieries, section of coal seams.

57. Map of the neighbourhood of Sheffield, with the boundaries of the following collieries, and extent of underground workings :—
    1. Sheffield Park Colliery.
    2 and 3. Occupation Road Colliery.
    4, 5, 6. Stannington Collieries.
    7 and 8. Dungworth do.
    9. Greystones Colliery.
    10 and 11. Eccleshall Collieries.
    12. Revelin Side Colliery.
    13. Clough Field do.
    14. Stephen Hill do.
    15. Kingsinlowe do.
58. Map of neighbourhood of Sheffield, showing boundaries and workings of the following collieries :—
    1. Mawr Wood Colliery.
    2 and 3. Woodthorpe Collieries.
    4. Birley Vale Colliery.
    5 and 6. Birley Planting Collieries.
    7. Attercliff Colliery.
    8. Woodhouse do.
    9. do. (Sherbal Bridge).
    10. do. (Station).
    11. do. (Junction).
    12. do. (Coalbrook).
    13. Argrave Colliery.
    14. Brightside do.
    15, 16, and 17. Tinsley Park Colliery.
    18 and 19. Fence do.
    20 to 25. Acton Common Collieries.
59. Birley Planting Colliery (Silkstone bed).
60. do. do. (Park Gate bed).
61. Woodsthorpe do. (Manor bed).
62. do. do. (Silkstone bed).
63. Woodsthorpe Common Old Works (Manor bed).
64. Unstone Colliery.
65. Intake Colliery (Manor bed).
66. do. (Silkstone bed).
67. Birley Vale Colliery do.
68. Dore House do. on Handsworth or Barnsley bed.
69. West Silkstone Colliery (workings on Silkstone bed).
70. do. do. (Whin Moor bed).
71. Fence do. (High Hazel bed).
72. do. do. (Furnace bed).
73. Carbrook do. (High Hazel bed).
74. West Staveley do. (Blackshale bed).
75. Huel Zion, plan of workings.
76. do. section of do.
77. Calstock Consols, plan of workings.
78. do. section of do.
79. do. transverse section on lodes.
80. Collacombe Mine, plan of workings.
81. South Huel Betsy, do.
82. Hill Bridge Consols, plan of sett showing the direction of lodes.
83. Map of the mining district of Tavistock.
84. South Crowndale, plan.
85. Devon Huel Union, plan.
86. Tavy Consols, plan of workings.
87. do. longitudinal section.
88. North Tavy, plan of workings.
89. do. longitudinal section.

90. Buller and Bertha, plan of workings.
91. Bedford Consols and Ganton United, longitudinal section.
92. Great Roughtor Consols, plan of workings.
93. do. do. longitudinal section.
94. West Sorbridge Consols, plan of workings.
95. do. do. longitudinal section.
96. Huel Russell, plan.
97. Huel Florence, plan showing lodes.
98. South Huel Betsy, mine sett.
99. East Collacomb, plan of sett.
100. Lydford Consols, longitudinal section.
101. Huel Arthur, section on Flat Rod Shaft.
102. do. longitudinal section on old lode.
103. do. do. do. at engine shaft.
104. do. do. do. on north lode.
105. Duke of Cornwall Mine, plan of workings.
106. Drake Wales, longitudinal section.
107. Kelly Bray, plan of workings.
108. do. section of Kelly Bray lode.
109. do. do. new works.
110. Huel Lion, plan of workings.
111. do. longitudinal section.
112. do. transverse section.
113. Kingston Down Consols, plan of workings.
114. do. do. longitudinal section on main lode.
115. do. do. do. on south lode.
116. Carn Brea Mine all the new workings added to plan.
117. Huel Hancock and North Tamar, plan of surface.
118. do. do. plan of workings.
119. West Phœnix Mine, working plan.
120. do. „ longitudinal section.
121. Dunsley Huel Phœnix, plan of workings.
122. „ „ longitudinal section.
123. Calstock United Mines, plan of workings.
124. do. do. section of copper lode.
125. North Tamar Silver Lead Mine, longitudinal section.
126. Map of mines near Keswick.
127. Tolvadden Mine, plan of sett.
128. do. plan of workings.
129. do. longitudinal section.
130. Ding Dong Mines, plan of workings.
131. do. do. plan of Good Fortune lode.
132. do. do. section of ditto.
133. do. Huel Malkin and Bassiliach.
134. do. do. longitudinal section.
135. do. section of Malkin and Green Peas lode.
136. do. section of new lode.
137. do. longitudinal section of new lode.
138. do. plan showing lodes at surface.
139. do. section of Huel Malkin lode.
140. do. section of Bussa lode.
141. do. transverse section at Bolitho's Shaft.
142. Spearne Moor Mine, plan of workings.
143. do. do. longitudinal section.
144. Trelyon Consols, plan of surface.
145. do. underground workings.
146. Huel Trenwith, longitudinal section.
147. Good Fortune and Little Huel Speed.
148. South Speed, longitudinal section of lode.
149. Huel Venture, do. south lode.
150. Providence Mines, Lelant, section of Carbonas.

151. Great Huel Vor United Mines, plan of underground workings.
152. do. do. transverse section of Trelawny and Sandbank lodes.
153. do. do. transverse section of Bounder and Borlase's lodes.
154. do. do. longitudinal section on main lode.
155. do. do. do. on Carlea lode.
156. do. do. do. on metal lode.
157. do. do. plan of works at Huel Metal.
158. Horse Island, surface plan of works at east end.
159. do. do. do. west end.
160. do. vertical section of east end.
161. do. horizontal and vertical section of works at western end.
162. do. surface plan of.
163. do. plan showing probable direction of the lodes.
164. do. horizontal section of workings at 8 fathoms level.
165. Cappagh Copper Mine, plan showing the elvans and cross courses.
166. do. do. longitudinal section.
167. Cappaglass, Ballycummish, Filemuch, and Rossbrin, plan of townships.
168. Ballycummish Mine, plan.
169. do. do. longitudinal section.
170. do. do. sketch of country.
171. Lodes shown on Ordnance map of the Ballycummish district.
172. Reports, settings, ticketings, &c., showing the exact state of Ballycummish and Horse Island Mines when abandoned.
173. Wigan coal field, section through.

In addition to the above, the usual price lists, ticketing papers, and matters connected with mining intelligence, have been collected and preserved.

ROBERT HUNT, Keeper of Mining Records.

III.

DONATIONS to the MUSEUM OF PRACTICAL GEOLOGY, during the Year ending 31st December 1858.

MICHELSEN, Mr. C.—Four fine crystals of parisite (Muzite) from the emerald mines of the Musso valley, New Grenada.

SEDGWICK, Mr. Charles O. F.—A specimen of compact magnesite from the Negropont, on the coast of Greece.

NEWALL & Co., Messrs. (through Mr. E. Shayler).—A specimen of wire rope manufactured by them for the Atlantic telegraph; also some Herculean wire for a model of the above-ground arrangements of a colliery in the north of England, presented by Mr. Wales.

WALES, Mr.—A model of the above-ground arrangements of a colliery in the north of England.

CHADWICK, Mr. W.—A specimen of Marl, exhibiting pseudomorphs of salt, from Epworth Field, Lincolnshire.

PARKINSON, Mr. JOHN, jun.—Specimens of a tufaceous deposit from the valley of the Trent, and of fossils from the Lias, Knapthorpe, Newark.

PHILLIPS, Mr. JOHN A.—Specimens of Hone stone, from Eagle harbour, Lake Superior, U.S.

CHRISTOE, Mr. J. P.—Specimens of carbonate and silicious oxide of zinc imported into Swansea from Spain.

FRANKFORT, Dr.—Specimen of Scheelite from Piedmont.

HAWKES, Mr. WM.—A series of specimens illustrative of experiments made, February 1856, at the "Eagle Foundry," Birmingham, showing the effect of the slow cooling of Basalt, accompanied with a drawing explanatory of the details.

Appendix A. Report of Director-General of the Geological Survey, &c.

Fitton, Dr.—Model of the volcano of Graham Island, formerly existing in the Mediterranean; constructed by M. Constant Prévost from the ashes of the volcano; also for specimens of Trigonia Fittoni.

The Council of the Geographical Society.—1. Specimen of gold bearing quartz, from Queen Charlotte islands. 2. Specimen of metallic copper, from the Outanagon District, Lake Superior.

Hurry, Mr.—Specimen of Arragonite, from Morro Velho, Brazil.

Slade, Mr. Felix.—Specimen of Venetian millefiore glass.

Guthrie, Col. Charles Seton.—Specimen of flexible sandstone from India.

Fitton, Dr.—Topographical model of part of the Alps and the valley of the Po, extending from Constance on the north to the Mediterranean and Adriatic seas on the south.

Monteith, Lieut.-General.—Specimens of iron ore, chromate of iron, and magnesite, from the district of Salem, Madras.

McWilliam, Dr.—Specimen of silicified wood, from Beechey Island, Arctic regions.

Hitchman, Mr. W. J.—Four cubes of building stone from the quarry at Blockley, Worcestershire.

Dalley, Captain.—A "vug" of green carbonate of copper, from Burra Burra, S. Australia.

Simmons, Captain.—A fine specimen of Bismuth Glance (Bismuthine), from Prideaux Wood Mine, St. Blazey, Cornwall.

McWilliam, Dr.—Specimen of Jade, from New Zealand.

Stoddart, Mr. J. L.—Specimens of blue and green glass, collected in 1842 from the site of ancient Alexandria; a portion of an original iron cramp, set with lead, from the ruins of ancient Alexandria; two lamps and a stamped fragment of terra-cotta.

Blashfield, J. M., Esq. (through the Right Hon. W. Cowper).—Specimens of silicified wood, from Gizeh, Egypt.

Elkington & Co., Messrs.—Colossal bust of Melpomene, electrotyped in copper.

Simpson, Maule, and Nicholson, Messrs.—T. Y. Hall's patent safety lamp, for miners.

Mostyn, Sir Pyers, Bart.—Specimens of building stone, limestone, scythe stones, and Chert, from Talacre, Rhyl, Flintshire.

Huntly, the Marchioness of.—Specimen of iron ore from Botolphbridge, Huntingdonshire, and of the pig iron smelted from it.

Moore, Mr. Joseph (through Mr. Empson).—Copy, in white metal, of the medal struck to commemorate Her Majesty's visit to Birmingham.

Wharncliffe, Lord.—Two specimens of native gold, in pepites of unusual form, taken from the Macquarie river, above its junction with the Turon, New South Wales.

Paule, Mr. Joseph M.—Model to illustrate his improved means for ventilating coal and other mines.

Lockhart, Dr.—Various mineral and metallurgical specimens from China.

Brown, Mr. John.—A dead-eye, fished up on the coast of Suffolk, with conglomerate attached, showing the cementing power of the oxide of iron derived from the metal originally encircling the block.

Phillips, J. Arthur, Esq.—Three ancient mining tools.

The Netherlands Government.—Series of specimens illustrating the mode of occurrence of tin ore in the islands of Billiton and Jeboes, Dutch East Indies.

Baker, Mr. John.—Specimen of heavy spar, from Virginia, U.S.

Hall, Lt. C. T. (through Mr. Mantell).—Specimens of lenticular selenite, from Ormington, near Weymouth.

The Master of the Mint.—A medal struck in aluminium.

Opie, Captain.—Specimen of arsenious acid.

Swinburne, R. W., & Co.—Specimens illustrative of the various stages in the manufacture of plate glass; also specimens of plate glass silvered by the old mercurial process, and by Petitjean's patent process.

Garden, Major.—Specimens of Zulu pottery, from Natal.

Huntly, the Marchioness of.—Specimen of iron ore from Orton Longueville, Peterborough.

THE DIRECTORS OF THE BRADA MINING COMPANY.—Large specimens of lead ore, from the Brada mines, in the Isle of Man.

WADE, Col.—Cube of building stone from Levergill quarry, four miles south-west of Richmond, Yorkshire.

MUSHETT, Robert.—Ancient iron miner's pick, found in Dean Forest.

FFARINGTON, Miss.—Five cubes of building stone from the neighbourhood of Preston.

HENNELL, R. G.—Four specimens of Cymophane.

TRENHAM REEKS, Curator.

IV.

DONATIONS OF FOSSILS.

ROLT, — Esq.—Specimen of Orthoceras (n. sp.), Ludlow Rock.

ROLF, J., Esq.—Three specimens of Gilbertsocrinus, and 3 specimens of Platycrinus.

BECKLES, J., Esq.—Natural cast of foot impression of the Guanodon. Weald of Kent.

LIGHTBODY, R., Esq.—Twelve specimens of the Ludlow Rock, with Pterygoti and star fish.

JONES, J., Esq., and SCLATER, Miss.—A fine series of corals, from the cornbrash of Fairford; also, fossils from the lias of the Vale of Gloucester.

ROSE, C. B., Esq.—Six specimens of Aporrhais pes-pelicani. West Bilney.

MANTELL, W., Esq.—Five models of Telerpeton Elginense. Morayshire.

LORD TALBOT DE MALAHIDE.—Five casts of cones (new). Inferior oolite, Bruton.

MURCHISON, Sir Roderick.—Fifty-three specimens of fossil fish, illustrating the Devonian rocks.

WOOD, S., Esq.—320 specimens illustrating the fossil fauna of the crags.

COMPTON, Rev. J.—344 specimens illustrating the Bracklesham series in the Hampshire Basin.

ROBERTS, G. A., Esq.—Permian plants. Warwickshire.

CARNEGIE, LINDSAY, Esq.—Labrum of Pterygotus gigas.

SMITH, — Esq.—Fine specimen of Pterygotus (tail).

CORBET, R., Esq.—Specimen illustrating the lias of Adderley, &c. Shropshire.

THOMAS H. HUXLEY.

V.

DONATIONS to the LIBRARY.

BINNS, Mr. W.—A Treatise on Orthographic Projection.

VAUDOISE, Société des Sciences Naturelles de.—The Bulletin of the Society (published at Lausanne).

BOMBAY GEOGRAPHICAL SOCIETY.—The Transactions of the Society, Vol. 13.

ROCKWELL, Mr. J. A.—A Compilation of Spanish and Mexican Law, by John A. Rockwell, Counsellor-at-Law. Vol. 1. 8vo. New York, 1851.

GREG, R. P., and W. G. LETTSOM, Messrs.—Their Manual of the Mineralogy of Great Britain and Ireland. 1 vol. 8vo. London, 1858.

THE COUNCIL OF THE ROYAL IRISH ACADEMY.—A Catalogue of the Antiquities in the Museum of the R. I. A. 1 vol. 8vo. Dublin, 1857.

THE MINISTER OF AGRICULTURE, COMMERCE, AND PUBLIC WORKS.—The Geological Map of France, to accompany the Two Explicative Volumes by MM. Elie de Beaumont et Dufrénoy. Paris.

FITTON, Dr.—Articles contributed to the Edinburgh Review from 1817 to 1849. 1 vol. 8vo. bound.

HARRIS, Sir W. SNOW.—Leçons Elémentaires d'Electricité, translated from the English Edition by E. Garnalt. Paris. 1 vol. 8vo. 1857.

Appendix A.

REPORT OF DIRECTOR-GENERAL OF THE GEOLOGICAL SURVEY, &c.

SMYTH, WARINGTON W., Esq.—Report of the Exploring Expedition to the Rocky Mountains in the Year 1842, by Capt. J. C. Fremont. Washington. 1 vol. 1847.

EAST INDIA COMPANY, The Honorable.—Geological Papers on Western India, by Henry J. Carter. 1 vol. 8vo., accompanied with an atlas of maps and plates.

ROYAL GEOGRAPHICAL SOCIETY.—Volume 27 of the Journal of the Society.

THE COUNCIL OF THE NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.—Volumes 4 and 5 of the Transactions of the Institute, 1855–6 and 1856–7. 8vo. half bound.

WELLINGTON, Mr. R.—Tables for ascertaining the Value of any Quantity of black tin from 1 to 10lbs., at any price from 20*l.* to 90*l.* per ton.

NICHOLSON, Sir CHARLES, D.C.L.—Sydney University Calendar. 1858. Catalogue of Egyptian Antiquities. 1858. Two Lectures delivered at the School of Arts, Sydney, by John Woolley, D.C.L.

THE BAVARIAN GOVERNMENT.—Statistics of the Produce of the Bavarian Mines and Salines, for the Year 1856–7.

THE COUNCIL OF THE NORTH OF ENGLAND INSTITUTE OF MINING ENGINEERS.—Volume 6 of the Transactions of the Institute. half bound. 8vo. 1858.

TWAMLEY, Mr. CHARLES.—Four Photographs, illustrating the Peculiarities in the Quarry of Columnar Basalt at Powk Hill, near Walsall, in the S. Staffordshire coal field.

MALLET, Mr. ROBERT, C.E., F.R.S.—The Earthquake Catalogue of the British Association, with the Discussion, Curves, and Maps, &c., by Robert Mallet, C.E., F.R.S., and John William Mallet, Ph.D.

PHILLIPS, Brothers, Messrs.—Catalogi del Museo Campana. 1 vol. 4to.

TENNANT, Prof. JAMES.—Catalogue of Fossils found in the British Isles, forming his private Collection.

ROYAL UNIVERSITY OF CHRISTIANIA.—Aradsten-Physikalske Meddelser Horby, Om de erratske Phænomener.

TRENHAM REEKS, Librarian.

VI.

RETURN of MAPS and SECTIONS of the Geological Survey of England supplied to Messrs. Longman & Co., the publishers, during the Year ending 31st December 1858.

	1857.	1858.	
Whole sheets	437	604	copies.
Quarter sheets	1,085	1,300	„
Horizontal sections	177	362	„
Vertical sections	193	170	„
Index of signs and colours	22	34	„
	1,914	2,470	

INDEX MAP
(A)
to the
GEOLOGICAL SURVEY OF GREAT BRITAIN
(ENGLAND AND WALES)

Published
in Sheets on a Scale of one Inch to a Mile.
Shewing the Progress to
Dec.r 31st 1858.

GEOLOGICAL SURVEY
Explanation

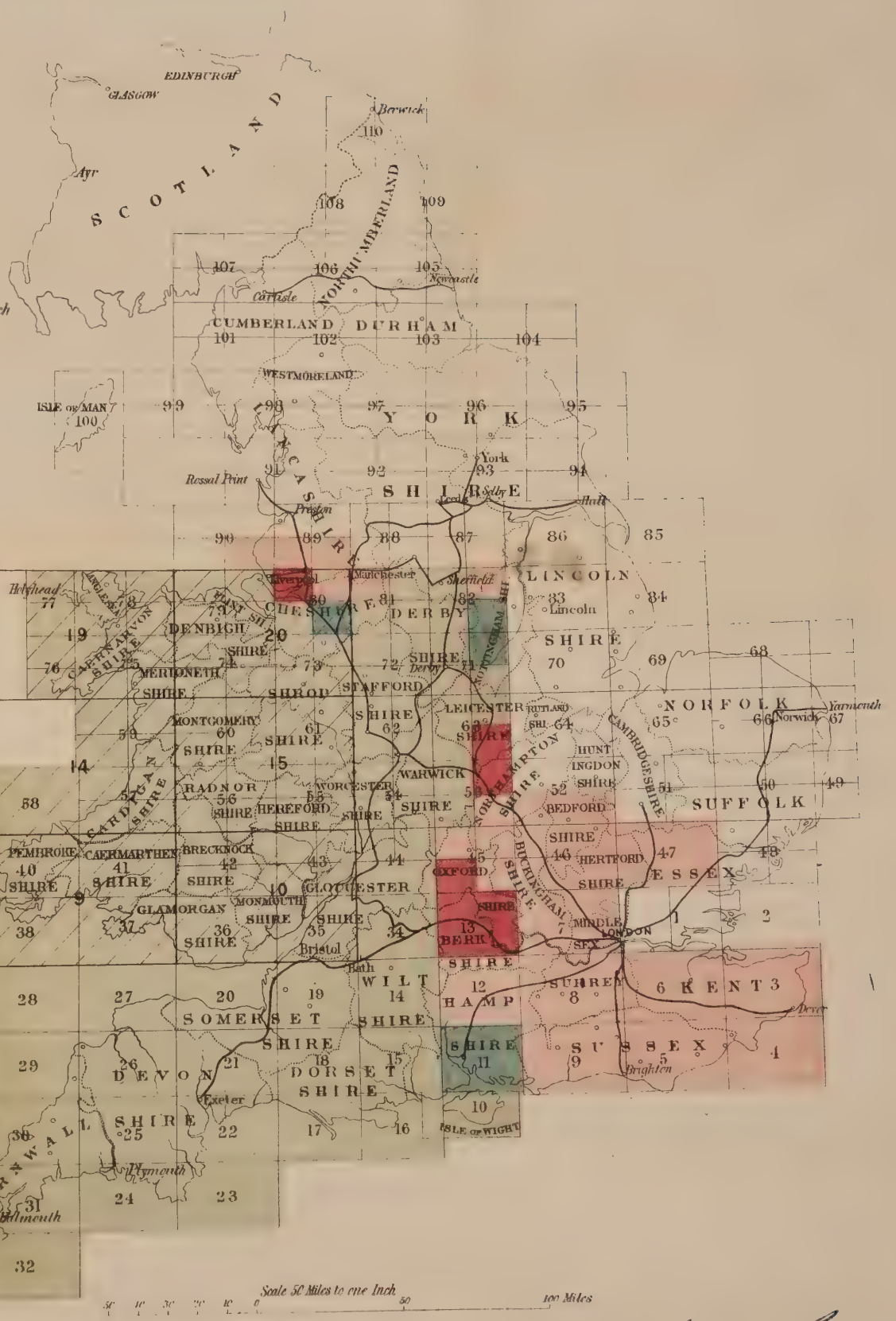
The Plates in the Map Colored thus are	*Published*		*to 31st Dec.r 1857*
			to 31st Dec.r 1858
Do thus	*Surveyed Complete*		
Do thus	*In Progress*		
Do thus	*Index Map Published. 4 inches to 1 Mile*		

GEOLOGICAL SURVEY	*Number of Plates Published,*	*51½.*
	Do Counties Complete	*21.*
	Do of Hor: Sections	*54. Price 5s each*
	Do of Ver: Sections	*25. Price 3s 6d each*

AGENTS
for the
SALE OF THE GEOLOGICAL MAPS.

Messrs Longman & Co. Paternoster Row.

The price of whole sheets is 6s with the exception of Nos 10, 23, 24, 27, 29, 32, 38, 39 & 58, which are 3s each. The price of the quarter sheets is 2s 6d each, with the exception of 57 N.W. 76 N. and 77 N. which are 1s each



And.w Ramsay
Local Director of the Geological Survey of Great Britain

INDEX MAP
(B)
to the
GEOLOGICAL SURVEY,
OF GREAT BRITAIN
(SCOTLAND)

Shewing the Progress to
31st Dec.r 1858.

EXPLANATION

In progress

Surveyed

ORKNEYS
Caithness
CAITHNESS
SUTHERLAND
HEBRIDES OR WESTERN ISLES
Stornoway
LEWIS
CROMARTY
Dornoch
NORTH UIST
ROSS-SHIRE
Elgin
Banff
MURRAY
Nairn
NAIRN
Inverness
INVERNESS
BANFF
ABERDEEN
ISLE OF SKYE
Portree
MURRAY
SOUTH UIST
Aberdeen
INVERNESS
KINCARDINE
Stonehaven
FORFAR
Forfar
MULL ISLE
PERTHSHIRE
Perth
Coupar
FIFE
KINROSS
Inverary
ARGYLE
CLACKMANNAN
PERTH
Stirling
STIRLING
DUMBARTON
JURA
ISLAY
Glasgow
RENFREW
EDINBURGH
HADDINGTON
Berwick upon Tweed
BERWICK
LANARK
Lanark
PEEBLES
Selkirk
SELKIRK
ROXBURGH
CANTIRE
ARRAN ISLE
AYRSHIRE
DUMFRIES
Dumfries
KIRCUDBRIGHT
WIGTOWN
Kircudbright
Wigtown

REFERENCE

The portions lettered B.C.D.E.F.G.H *belong to* CROMARTY
" A " ROSS
" I " NAIRN

Scale: 32 Miles to One Inch

20 15 10 5 0 20 40 60

Andw Ramsay
Local Director of the Geological
Survey of Great Britain

INDEX MAP

(C)

Coloured to show the state of the

GEOLOGICAL SURVEY OF IRELAND
ON THE SIX INCH MAP

at the close of the Year 1858

AGENTS
for
SALE OF THE GEOLOGICAL MAPS

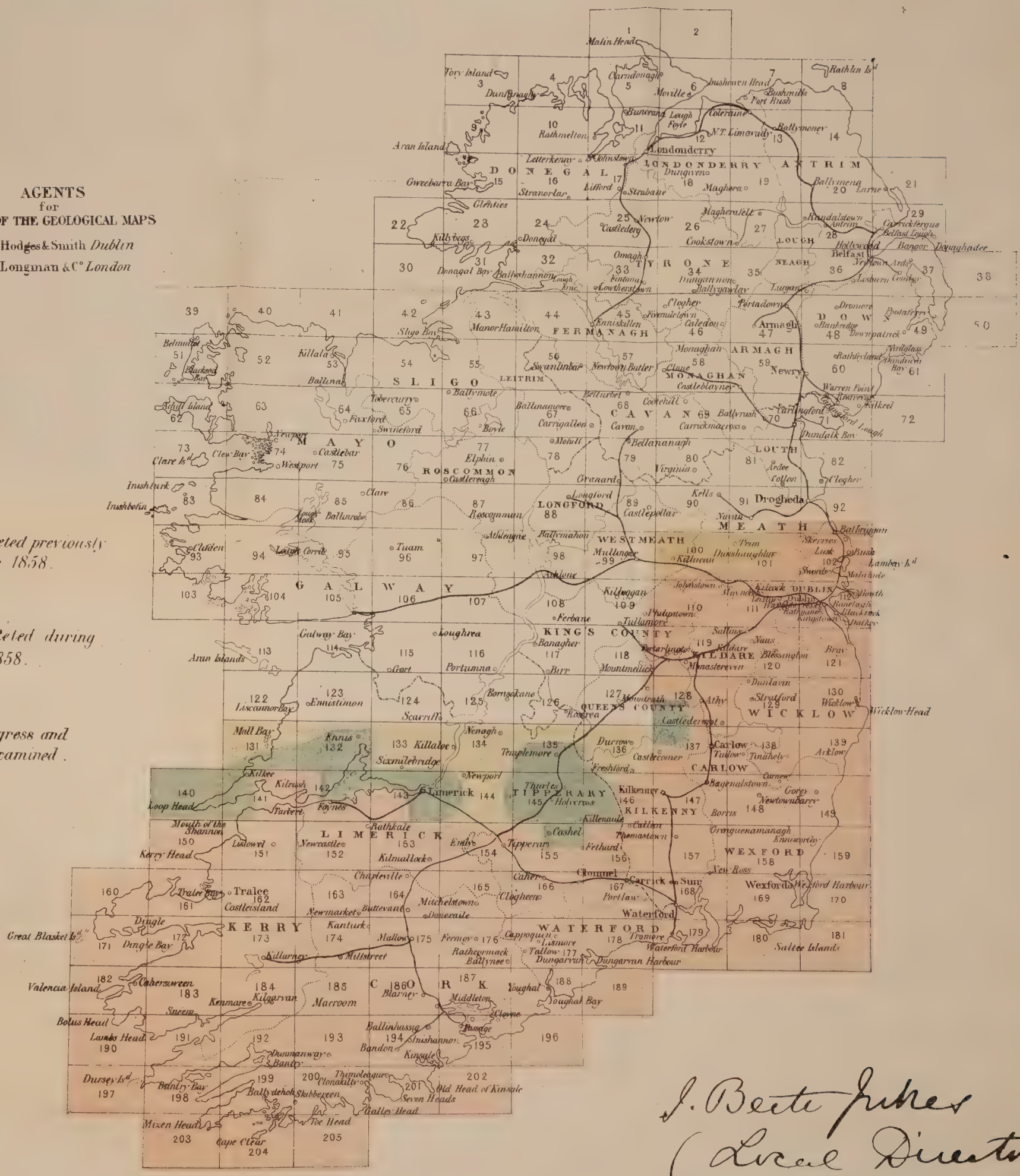
Mess^rs Hodges & Smith *Dublin*

Mess^rs Longman & C^o *London*

Area completed previously to the year 1858.

Area completed during the year 1858.

Area in progress and next to be examined.


DONEGAL
LONDONDERRY
ANTRIM
TYRONE
FERMANAGH
ARMAGH
DOWN
LOUGH NEAGH
SLIGO
LEITRIM
MONAGHAN
CAVAN
MAYO
ROSCOMMON
LONGFORD
LOUTH
MEATH
WESTMEATH
GALWAY
KINGS COUNTY
QUEENS COUNTY
KILDARE
WICKLOW
CARLOW
KILKENNY
TIPPERARY
LIMERICK
KERRY
CORK
WATERFORD
WEXFORD
DUBLIN
Malin Head
Londonderry
Letterkenny
Strabane
Omagh
Enniskillen
Armagh
Monaghan
Newry
Belfast
Drogheda
Sligo Bay
Donegal Bay
Galway Bay
Clew Bay
Dingle Bay
Kenmare
Bantry Bay
Dundalk Bay
Carlingford Lough
Belfast Lough
Wicklow Head
Loop Head
Kerry Head
Valencia Island
Great Blasket Is.d
Aran Islands
Clare Is.d
Inishbofin
Inishturk
Achill Island
Belmullet
Tralee
Limerick
Waterford
Clonmel
Cashel
Carrick on Suir
Wexford
Castlebar
Westport
Ballina
Sligo
Boyle
Roscommon
Castlereagh
Longford
Athlone
Mullingar
Tullamore
Edenderry
Naas
Kildare
Monasterevin
Portarlington
Maryborough
Athy
Carlow
Kilkenny
Thurles
Nenagh
Ennis
Killaloe
Tuam
Ballinrobe
Castlebar
Swinford
Foxford
Ballymote
Tobercurry
Sligo
Manor Hamilton
Belturbet
Cavan
Bellanamagh
Virginia
Kells
Navan
Trim
Drogheda
Ardee
Dunshaughlin
Ballybrittas
Balbriggan
Swords
Lusk
Rush
Malahide
Howth
Dublin
Kingstown
Blackrock
Bray
Wicklow
Arklow
Gorey
Newtownbarry
New Ross
Wexford Harbour
Waterford Harbour
Dungarvan
Dungarvan Harbour
Lismore
Cappoquin
Fermoy
Mallow
Millstreet
Killarney
Kenmare
Bantry
Skibbereen
Clonakilty
Bandon
Kinsale
Cork
Youghal
Youghal Bay
Middleton
Blarney
Macroom
Ballinhassig
Passage
Cloyne
Rathcormack
Ballynoe
Tallow
Carrigaline
Old Head of Kinsale
Seven Heads
Galley Head
The Head
Mizen Head
Cape Clear
Skull
Castletownbere
Bere Island
Dursey Is.d
Valentia Island
Caherciveen
Dingle
Tralee
Castleisland
Listowel
Ballybunion
Kilrush
Loop Head
Mouth of the Shannon
Foynes
Limerick
Rathkeale
Newcastle
Kilmallock
Charleville
Buttevant
Mitchelstown
Doneraile
Fermoy
Cahir
Clogheen
Tipperary
Emly
Thurles
Holycross
Templemore
Roscrea
Borrisokane
Nenagh
Killaloe
Scarriff
Portumna
Gort
Loughrea
Ballinasloe
Athlone
Banagher
Birr
Tullamore
Edenderry
Mountmellick
Monasterevin
Portarlington
Maryborough
Mountrath
Durrow
Castlecomer
Freshford
Kilkenny
Callan
Thomastown
Fethard
Clonmel
Carrick on Suir
Waterford
Dungarvan
Youghal
Cappoquin
Lismore
Tallow
Rathcormack
Ballynoe
Middleton
Blarney
Cork
Macroom
Kanturk
Newmarket
Buttevant
Mitchelstown
Doneraile
Charleville
Kilmallock
Newcastle
Listowel
Ballybunion
Tralee
Castleisland
Dingle
Dingle Bay
Great Blasket Is.d
Killarney
Millstreet
Kenmare
Bantry
Skibbereen
Clonakilty
Bandon
Kinsale
Old Head of Kinsale
Seven Heads
Galley Head
The Head
Mizen Head
Cape Clear
Skull
Castletownbere
Bere Island
Dursey Is.d
Valentia Island
Caherciveen
Ballinskelligs Bay
Kenmare River
Bantry Bay
Dunmanway
Banteer
Kanturk
Mallow
Fermoy
Cappoquin
Lismore
Tallow
Rathcormack
Ballynoe
Middleton
Blarney
Cork
Youghal
Youghal Bay
Cloyne
Passage
Ballinhassig
Shrushannon

INDEX MAP
(D)

Coloured to show the state of the
publication of the results of the
GEOLOGICAL SURVEY OF IRELAND
ON THE ONE INCH MAP
at the close of the Year 1858

AGENTS
for
SALE OF THE GEOLOGICAL MAPS

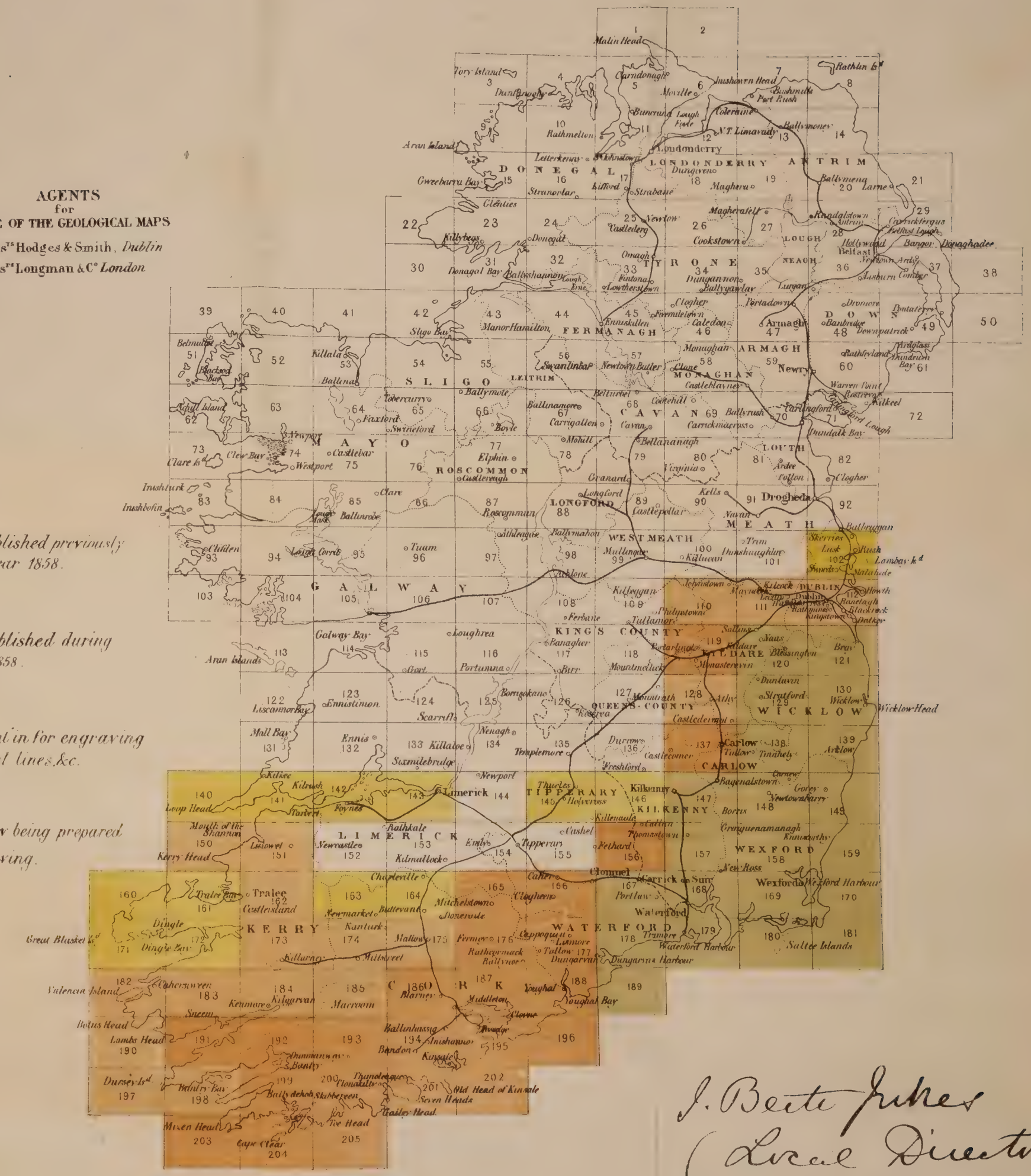
Mess^rs Hodges & Smith, *Dublin*
Mess^rs Longman & C° *London*

Sheets published previously to the year 1858.

Sheets published during the year 1858.

Sheets sent in for engraving Geological lines, &c.

Sheets now being prepared for engraving.



J. Beete Jukes
(Local Director)
Dec 31st 1858

APPENDIX B.

REPORT of the CONDITION and PROGRESS of the MUSEUM OF IRISH INDUSTRY and GOVERNMENT SCHOOL OF SCIENCE APPLIED TO MINING AND THE ARTS, DUBLIN, for the Year 1858, by Sir ROBERT KANE, F.R.S., M.R.I.A., Director.

THE arrangement and classification of the collections have been further advanced during the past year, and several interesting series of specimens have been obtained; some through donation and others by purchase, whereby the utility of the collections in illustrating the lectures of the professors and the actual condition of the industrial arts has been augmented in an important degree.

This gradual increase of the collections has in many cases necessitated the removal of series of less value as scientific illustrations, but in every case the systematic classification of the collections has been carefully preserved.

Some further progress has been made in the examination and re-arrangement of the collection of minerals referred to in the last report, but it being necessary before proceeding to their final classification and labelling to supply a number of deficiencies which were found to exist, as well among the simple minerals as the application of minerals to industrial purposes, the completion of this work has been deferred until the means of supplying those deficiencies shall have been obtained, which it is hoped will be effected during the coming year.

The donations received from the Science and Art Department having rendered the collections of porcelain and earthenware very tolerably complete as typical representations, their final classification and numbering has been commenced and has made much progress. The collection of illustrations of British industry, presented by the Royal Commissioners for the Exhibition of 1851, has been also arranged and forms a very complete and compact exhibition, being as it were a useful summary to the Museum at large.

The collections of corals, star fishes, and recent shells received from the Ordnance Survey, and serving so usefully in connexion with the special collections of the Geological Survey, have been arranged by the Curator, with the assistance and advice of Mr. Baily, Palæontologist to the Geological Survey.

The necessity for preparing as speedily as possible the materials necessary for a detailed catalogue of the collections has caused a good deal of the available time of the Curator to be given to the permanent arrangement and numbering of the portions of the collections, the completeness of which admits of their final arrangement. Much progress has been made in this respect with the collections of fuels and iron ores, and products of the iron manufacture. The number of specimens to be individually

Appendix B.

Report of Director of Museum of Irish Industry.

examined, numbered, and labelled is, however, so great, that even with the best exertions considerable time must elapse before this work can be brought to an end.

Among the specimens presented as donations to the Museum during the past year, I beg to specify,

A collection of 32 objects of porcelain and earthenware and of illustrations of mediæval industry in ivory and metal, presented by the Science and Art Department. This collection is especially valuable, as serving to complete the collections of ceramic art, by supplying several authentic specimens of majolica ware, which exhibit the characters of that variety of pottery, both as to material and artistic decoration, in an eminent degree. There has also been presented, by the Royal Commissioners for the Exhibition of 1851, a set of the collection of specimens illustrative of British industry as arranged under their direction for presentation to foreign powers.

A collection of objects presented by the Royal Dublin Society, espscially valuable as serving to complete our series of illustrations, of the manufacture of iron and steel. This very valuable collection included coach springs, steel hammers, screws, and other important examples. This collection is not, strictly speaking, given to this Museum as a donation, but only deposited here for exhibition, as it was found that the Royal Dublin Society, being a corporation, could not easily divest itself of its property in those objects.

A most interesting collection of specimens, 345 in number, of Irish lace has been presented by the committee of the Irish Lace Normal School, together with a specimen of Irish Valenciennes lace mounted on a pillow, with lace and bobbins, and three other specimens of varieties of Irish lace attached to their bobbins. The committee has also presented to the library of the Museum six numbers of the Grammar of Ornament, by Owen Jones. This collection, so well illustrating the lace manufacture generally and its special importance as a branch of industry in Ireland, I consider to be one of the most interesting donations which the Museum has lately received.

From Messrs. J. Malcolm and Sons and David Thompson, of Dundee, there has been received a very interesting series of specimens of the jute fibre and its various applications, showing the various stages of its manufacture and the different kinds of fabrics formed from it.

A number of other donations of less remarkable importance will be found detailed in the list annexed (Appendix A.), and a complete list of the purchases of specimens made during the year will be found annexed (Appendix B.)

The Museum galleries were open to the public on week-days from 11 to 4 o'clock, during which time there visited the galleries, from the 1st January to the 31st December, 23,638 persons.

The Museum galleries were also open to the public in the evenings on which lectures were delivered, from 7 till half-past 9 o'clock ; and since October 11th, by an arrangement approved of by my Lords, the galleries were opened to the public on two

evenings in the week, Mondays and Thursdays, from 7 till 9½ o'clock, independently of lectures. The number of evening visitors in the year, was on the evening of lectures, 9,523, and on other evenings 180, making the total number of visitors to the Museum within the year to be 33,341.

Chemical Department.

The business of the Chemical Department has been conducted by Mr. Galloway during the year with very great energy and success. In the analytical department, an extensive investigation of specimens of milk and flour has been carried out for the Poor Law Union of Kenmare, County Kerry, for the purpose of detetermining questions of adulteration. Eight analyses of China clays have been made, and seven analyses of manures and marls.

In my last report I mentioned that Mr. Galloway had commenced a series of analyses of the metallic ores in the Museum collections, and that he proposed to avail himself of the assistance of the senior students in the practical chemistry class in carrying out that useful work. The result has been highly satisfactory, notwithstanding that considerable impediments were found to occur. Sixteen analyses of copper ores, four analyses of lead ores, and thirteen determinations of the iron in iron ores having been made. The results of these analyses are exhibited on the descriptive labels of the specimens in the galleries, and thus assist in increasing the usefulness of the Museum as a source of instruction for the public, whilst affording the best possible field for practice in the higher chemical studies. The useful result of thus employing the senior students is further shown by the fact, that during the year three papers have been published by students, Mr. Byrne, Mr. Plunket, and Mr. Dowling, containing original observations of practical interest in analytical chemistry, made during their course of laboratory work, and which are creditable alike to the authors, to their instructor, and to the institution.

Library.

The Museum Library has been open in the evenings during the session, and was attended by 706 persons, giving an average attendance of four persons on each night. None but registered students of the Government School of Science are allowed to read in the library.

Government School of Science applied to Mining and the Arts.

The arrangements for systematic instruction in the sciences applied to industry have been carried out during the past year by the several professors with eminent zeal and ability, and have been attended with considerable success. The general plan of the courses of lectures was that sanctioned by my Lords, and explained in the official programme for the year 1858–59. I have much pleasure in expressing my sense of the co-operation afforded by the Royal Dublin Society in the arrangements necessary for the delivery of those courses of lectures, for which the lecture

Appendix B.

Report of Director of Museum of Irish Industry.

theatre of that institution was made use of; and I have also to acknowledge the assistance afforded by the authorities of that society in furnishing specimens and apparatus from their collections for the more complete illustration of the courses of lectures delivered in this institution.

In my last report I described the proceedings of the session of 1857–58 up to the 31st December 1857, being the date of preparation of that report; I have now to report regarding the courses of lectures of the year now closed as follows:—

Dr. Wm. Barker, Professor of Physical Science, delivered three courses of lectures, two in the theatre of the Royal Dublin Society, and one in that of this institution. The first course of twenty lectures delivered in the evening was attended by 3,915 persons, giving an average of 195·7 persons at each lecture.

The second course was delivered in the afternoon. It was attended only by 85 persons, giving an average of six at each lecture. This small attendance was attributed to the payment required for entrance, and to the interruption of the course by the serious illness of Dr. Barker, which protracted the completion of the course until after the session had been formally closed by the distribution of prizes.

The third course was attended by 2,427 persons, being an average of 202 at each lecture.

The number of tickets sold for Dr. Barker's systematic course was seventeen. At the close of the course the usual examination for prizes was held, at which three students competed.

For Professor Jukes' systematic course of thirty lectures on geology forty persons entered their names as registered students. These lectures were delivered in the months of January and February. At the close of the course four students presented themselves for the special examination, all of whom passed.

In the present winter session, 1858–59, Professor Jukes has delivered a course of 24 lectures on physical geography, divided into two parts. The first part was delivered in the evening in the theatre of the Museum of Irish Industry, and was attended by an average of 213 persons. The second part was delivered in the afternoon in the theatre of the Royal Dublin Society, and was attended by an average of 202 persons.

A course of lectures on general chemistry was delivered in the theatre of the Museum of Irish Industry by Professor Sullivan, at four o'clock, commencing February 16th. For this course a fee of 2*s.* 6*d.* was paid; the number of students entered was 26; and the average attendance was 16. Professor Sullivan also delivered a course of twelve popular lectures in the theatre of the Museum, in May and June on the chemistry of food. The time of delivering was 8 o'clock P.M., and the average attendance was 207. A further course was delivered in the theatre of the Royal Dublin Society on the metalloids in November, at four o'clock, the average number of persons attending which was 152.

At the close of the systematic course of lectures on chemistry the usual examination was held, at which five students competed.

In the department of practical chemistry instruction was given daily in the laboratory, by Professor Galloway, to the students of the day classes and to the students of the evening class; practical instruction was given on 112 evenings. The period of the general session is divided into two periods of laboratory instruction, of these the first was attended by 25 students, with an average attendance of 18; and the second period was attended by 20 students, with an average attendance of 14. The total number of laboratory students was 6 day and 39 evening students, making in all 45.

At the close of the session, examinations were held of the practical classes, senior and junior; the former were required to execute quantitative analyses of ores, the latter, to make qualitative analyses of complex solutions. The results, as reported by Professor Galloway, manifested a most satisfactory degree of knowledge of the subject. The standard of perfect answering, 1,000, being actually obtained by the student, Mr. Alexander, who obtained first place, and the lowest number of marks obtained by any of five who competed being 900.

As further evidence of the excellent results from this department, I may observe that my Lords having approved of the appointment of an assistant chemist to this Museum, were pleased to select Mr. Daniel Moran, who had obtained the second place at the examination referred to above; and subsequently, on the premature decease of Mr. Moran, the approval by my Lords of the zeal and ability manifested by the students of the practical class, under Professor Galloway's guidance, was further shown by the selection of Mr. Plunket, whose name has been already mentioned in this report, as successor to Mr. Moran as assistant chemist.

It is gratifying to have also to report a still further increase in the number of laboratory pupils for the course now opened for the present session, the number already entered being thirty-two, against twenty-five, which was the number at corresponding period last year.

In the department of botany, Professor Harvey delivered three courses, each of ten lectures. The first, in April, was delivered in the evenings, on popular economic botany, specially as to the plants used as food, and was attended by an average of about 40 persons.

The second course was on structural and physiological botany; it was attended by an average of about 100 persons. For this course six persons entered as registered students; but this and the former being delivered in the theatre of the Royal Dublin Society, were practically free to the public, and hence none but those persons who proposed being candidates at the prize examinations presented themselves to pay the necessary fee as registered students.

Professor Harvey's third course was delivered in the Botanic Gardens of the Royal Dublin Society, and, not forming any part of the plan of systematic instruction of this institution, does not fall within the province of this report.

Appendix B.

Report of Director of Museum of Irish Industry.

In the department of zoology, Dr. Kinahan has delivered two courses of lectures, one in the theatre of the Royal Dublin Society, which was attended by an average of 128 persons, the second, in the theatre of the Museum of Irish Industry, attended by an average of 80. The former course was altogether free to the public; of the latter, a portion was allowed to be free, but the fee of two shillings was required for the remainder. The number of registered pupils for this course was 12.

A novel feature introduced by Dr. Kinahan in his department is the establishment of a regular four months' course of zoological study, under the heads of, 1st. Geographical and Geological Zoology;—2nd. Practical and Comparative Zoology;—3rd. Physiology and Classification;—and, 4th. Intimate Structural Zoology. Of these four courses, the second and fourth were only established in this year; and although unwilling to report positively regarding what is in some degree as yet an experiment, Dr. Kinahan considers the arrangement to have so far been attended with the happiest results. The usual examination was held at the termination of Dr. Kinahan's lectures, at which seven students competed.

When the several systematic courses of the Session 1857–58 had terminated, the general examination in all the subjects of those five courses was held. At this examination two students competed.

After each class examination, and after the general examination, prizes and certificates were adjudged to those students who had manifested satisfactory proficiency. The number and nature of the prizes and certificates given, and the names of the successful competitors, will be found in Appendix C.

The answering at all those examinations was reported upon by the professors in very favourable terms, with the exception of the class of general chemistry, in which Professor Sullivan reported that the answering was not so good. The Professor attributes this deficiency to a want of elementary education, especially as to arithmetic. On this account no first prize was awarded in the class of general chemistry.

In connexion with this subject I beg to refer my Lords to my letter accompanying the estimate, and applying for means to supply this great defect in our educational arrangements.

The answers of the students who had obtained the highest places in each of the special classes and in the general examination having been submitted to my Lords, their Lordships were pleased to manifest their approval of the proficiency displayed by those answers, and to award, as a further honour in each of the special classes, the bronze medal, and for the general examination, the silver medal of the Department.

The names of the medallists will be found in Appendix D.

The session was closed on the 14th June by a meeting for the purpose of conferring the several prizes and distinctions awarded at the examinations. The occasion was honoured by the presence of his Excellency the Earl of Eglinton, Lord Lieutenant, who was pleased to express the most kind sympathy with the progress

of the institution. His Excellency himself conferred the several rewards, and referred to the occasion as illustrating practically the great opportunities now afforded, through the liberality of the State, to all classes of the community to obtain the means of scientific instruction which may fit them for practical advancement in their several walks of life.

The meeting was attended by 508 persons; and previously to the distribution of prizes by his Excellency, I had the honour to submit a brief explanation of the system of scientific instruction pursued, and of the general arrangements and classification of the Museum.

The business of the session now current was opened on October 7th, when I delivered an address on the History and Present Condition of the Ceramic Manufactures, as illustrated by the collections in the Museum. This opening meeting was attended by 405 persons.

The several courses of lectures delivered by the professors in the current session, so far as it has proceeded, have been already sufficiently described above.

(Signed) Robert Kane,
Director of the Museum of Irish Industry.

11th January 1859.

APPENDIX A.

List of Donations presented to the Museum of Irish Industry from the 1st January to the 31st December 1858.

A collection of 32 specimens of Mediæval and Renaissance objects in earthenware, metal, and ivory.
Presented by the Department of Science and Art.

A collection of objects of manufacture in iron and steel.
Deposited by the Royal Dublin Society.

A series of 345 specimens of Irish lace.

A specimen of Irish Valenciennes lace, mounted on a pillow, with pins and bobbins.

2 specimens of lace attached to their bobbins.

1 specimen of black lace attached to the bobbin.
Presented by the Committee of the Irish Lace Normal School.

3 different samples of jute fibre, to show the variety and qualities of the jute.

16 specimens of jute threads and rope.

7 specimens of jute cloth.

8 specimens of coloured carpets, hearth-rug made of jute.

6 specimens of matting made of Manilla rope.
Presented by M. J. Malcolm & Sons, and David Thompson, Dundee.

Part of a column of stalactite from the Caves near Mitchelstown.
Presented by G. Longford Rae, Esq.

Quartz vein in coal, Knockinglass Colliery, co. of Tipperary.
Presented by J. Meadows, Esq.

Specimens of anthracite coal from Kill, co. Cavan.
Presented by E. Hudson, Esq.

Mya arenaria with syphonal tube, from Sandymount Strand, Dublin; Haliotis splendens from the South Seas, and a stud made from the same.
Presented by W. H. Baily, Esq., of the Geological Survey of Ireland.

Appendix B. Report of Director of Museum of Irish Industry.

Mineral pitch, with carbonate of lime, in a fragment of an orthoceras, from Glenborne, co. Limerick. Crystals of carbonate of lime from Oldtown, co. Dublin. 17 specimens of common amethyst quartz. 4 specimens of smoked quartz. Phosphatic concretions from Kinstead, near Alton (chlorite marl).

Presented by J. Beete Jukes, Esq., Local Director of the Geological Survey of Ireland.

A fine specimen of the flexible sandstone from India.

Presented by Colonel Charles Seton Guthrie, 30, Portland-place, London.

A collection of the copper ores of Namaqualand.

Presented by Andrew Wyley, Esq., Cape of Good Hope.

6 specimens of fluor spar, as employed in smelting lead ore.

Presented by the Mining Company of Ireland, per Robert Heron, Esq., Secretary.

2 specimens of lead ore from the new mine at Ballyeorus, co. Wicklow.

Presented by the Mining Company of Ireland, per Robert Heron, Esq., Secretary.

A carving in bog oak of Dunbrody Abbey. A piece of lace per Dr. Sullivan.

A series of specimens of waxed cloth, and some of its applications.

Presented by James Belford Merry, Esq.

Fine specimens of calamites approximates, and cannæformis in coal measure, sandstone tracks of annelides and lepidodendren in true coal, from Queen's co. and Carlow.

Presented by Benjamin Edge, Esq., M.P., Colnbrook House, Castlecomer.

Fine slabs with tracks of various kinds from coal measure sandstone, Luggacurra, Queen's co.

Presented by Rev. J. M. Emerson, Balleckmoyler, Carlow.

Bones of the Megaceros Hibernicus, from near Mullinahone, co. Tipperary.

Presented by Lady Elizabeth Butler, Marlay, Rathfarnham.

APPENDIX B.

List of Specimens purchased and added to the Museum Collections, from the 1st January to the 31st December 1858.

	£	s.	d.
Specimens of Connemara marble	1	12	6
Bottles	0	16	6
Specimens of porcelain	5	10	0
" "	8	0	0
Specimen of prehnite	0	10	0
Mercury	1	5	4
Model of a silk-throwing machine	8	0	0
Mineral specimens	10	0	0
Six hundred specimens of great oolitic fossils from Minchinhampton	12	0	0
Physical apparatus; goniometers, Wollaston and Hauy	4	14	6
Model of bag net	1	10	0
Two blocks for printing calico	1	0	0
Specimens of sea flowers	0	6	6
Leather frame for flowers	0	10	0
Brooch and bracelet, specimens of shell and jet	1	7	0
Brooch and cross, specimens of marcassite pyrites	0	15	0
Fittings for silk-throwing machine	8	0	0

APPENDIX C.

EXAMINATION in ZOOLOGY.—Session of 1857–58.
Examiner, JOHN R. KINAHAN, M.D.
Total number of marks, 2,000.

Prizes.

1st. William H. Hartford.
2nd. Harriet E. Harman.
3rd. Alexander F. Gordon.

EXAMINATION IN GEOLOGY.—Session of 1857–58.
Examiner, J. BEETE JUKES, M.A.
Total number of marks, 1,000.

Prizes.

1st. Alexander F. Gordon.
2nd and 3rd. Not awarded.

EXAMINATION in CHEMISTRY.—Session of 1857–58.
Examiner, WILLIAM K. SULLIVAN, Ph. D.
Total number of marks, 1,000.

Prizes.

1st. Not awarded.
2nd. Miss Halgena Hare.
3rd. Alban Meredith.

EXAMINATION in BOTANY.—Session of 1857–58.
Examiner, WILLIAM H. HARVEY, M.D.

Prizes.

1st. William Corker.
2nd. Miss Zoe Leigh Coneys.

EXAMINATIONS in PHYSICAL SCIENCE.—Session of 1857–58.
Examiner, WILLIAM BARKER, M.D.
Total number of marks, 1,000.

Prizes.

1st. J. P. Brophy.
2nd. Miss Halgena Hare.
3rd. Alban Meredith.

EXAMINATION in PRACTICAL CHEMISTRY.—Session of 1857–58.
Examiner, ROBERT GALLOWAY, F.C.S.L.
Total number of marks, 1,000.

Senior Evening Class.—*Prizes.*

1st. Edward Alexander.
2nd. Daniel Moran.

Junior Evening Class.—*Prizes.*

1st. R. Simpson.
2nd. Michael Hanratty.
3rd. John Brown.

Appendix B.

REPORT OF DIRECTOR OF MUSEUM OF IRISH INDUSTRY.

GENERAL EXAMINATION in GEOLOGY, ZOOLOGY, BOTANY, PHYSICS, and CHEMISTRY.—Session of 1857–58.

EXAMINERS :

J. BEETE JUKES, M.A.
WILLIAM BARKER, M.D.
WILLIAM H. HARVEY, M.D.
WILLIAM K. SULLIVAN, Ph. D.
JOHN R. KINAHAN, M.D.

Total number of marks, 3,000.

Prizes.

1st. Miss Halgena Hare.
2nd. Alban Meredith.

Medallists.

Miss Halgena Hare.
Alexander F. Gordon.
William Corker.
William H. Hartford.

APPENDIX D.

SUMMARY.

The number of persons who visited the Museum from the 1st January to the 31st December 1858 inclusive was	23,818
Number of Students who visited the Library of the Museum from the 1st January to the 31st December 1858, including the usual recess	796
Professor Jukes' Systematic Lectures	1,122
Dr. Sullivan's ditto	487
Dr. Barker's ditto	85
Dr. Kinahan's ditto	1,091
Professor Jukes' Free Lectures	2,560
Dr. Sullivan's ditto	2,487
Number attended Distribution of Prizes	580
Number attended Sir Robert Kane's Address	405
Total	33,341

NUMBER of PERSONS who competed for Prizes in the Year 1858.

Natural Philosophy	3
General Chemistry	5
Practical Chemistry	14
Geology	4
Botany	2
Zoology	7
General Examination	2

APPENDIX C.

Annual Report of the Royal Dublin Society for the Year 1858.

To the Most Noble the Marquis of Salisbury, K.G., President of the Committee of Privy Council on Education.

My Lord,

The Council of the Royal Dublin Society have the honour to submit the Annual Report on the condition and progress of the institution for the past year.

During this period the Society has been increased by the accession of 80 additional members.

On the 24th May 1858 and five following days the second annual examination for general and commercial certificates of merit was held in the Society's house, at which 28 candidates presented themselves, 27 of whom had applied to be examined for general certificates and 15 for commercial certificates also.

The Council submit the following as the adjudication of certificates and prizes :—

Commercial Certificate.

To John Wilson Murphy, 119, Thomas Street, Dublin, for book-keeping, mercantile correspondence, and commercial geography,—in addition to a general certificate obtained at the last examination,—with a prize of 3*l.*

General Certificates.

For satisfactory answering in the general subjects, viz.—writing, English composition, arithmetic, and at least one other special subject, as follows :—

To William Taaffe, Santry, Dublin, for English history, geography, algebra, geometry, plane trigonometry, and the general subjects, with a prize of 5*l.*

To David Allen, Santry, Dublin, for English history, geography, algebra, geometry, trigonometry, mensuration, and the general subjects, with a general prize of 3*l.*

To Joseph Vaughan, 73, Harcourt Street, Dublin, for English history, geography, algebra, geometry, and trigonometry, and the general subjects, with a prize of 2*l.*

To Henry Stokes Stacke, 11, Leinster Road, Rathmines, Dublin, for English history, geography, geometry, and the general subjects.

To John Maher, 2, Clonliffe Terrace, Drumcondra, Dublin, for English history, geography, and geometry, and the general subjects.

To Francis Patrick Tynan, 23, College Green, Dublin, for English history and the general subjects.

To George B. S. Sanders, 10, Sidney Avenue, Blackrock, Dublin, for geography and the general subjects.

To Charles Bagot Campbell, Schoolhouse, Carysfort Avenue, Blackrock, Dublin, for geography, history, and the general subjects.

To Florence M'Carthy, 23, Christ Church Place, Dublin, for history and the general subjects.

Special prizes were awarded as follows for distinguished answering in,—

History, To William Yandell, 6, South Frederick Street, Dublin; and to John Maher, 2, Clonliffe Terrace, Drumcondra, Dublin.

Geography, To George B. S. Sanders, 10, Sidney Avenue, Blackrock, Dublin; and to Thomas Long, 75, South Great George's Street, Dublin.

In order to extend the usefulness and influence of the Society the following schemes for the association and affiliation of such of the metropolitan and provincial societies of Ireland as have been founded for the cultivation or diffusion of scientific or other useful knowledge amongst the people have been adopted.

First. For the association of metropolitan societies the following rules have been framed:—

1st. The association or union in each instance to be by special vote of the Society at large, on the recommendation of the Council, and to be at any time liable to be dissolved in like manner.

2nd. Societies in union to be permitted to hold meetings for the reading and discussion of papers on the premises of the Royal Dublin Society, either in the theatre or some other convenient apartment to be appointed by the Council, on the same evenings on which the meetings of the Royal Dublin Society are held. All the societies to adjourn to a common refreshment room at 10 o'clock, and the house to be cleared out at 11 o'clock.

3rd. Members of the Royal Dublin Society, and of associated societies, to have the privilege of attending all or any of these evening meetings.

4th. Every person attending the evening meetings, whether as a member of the Royal Dublin Society or of any associated society, is to contribute 5*s.* to a common refreshment fund at the beginning of each session. This subscription to be collected by the officers of the respective societies, and to be handed over to the Registrar of the Royal Dublin Society. Each member who shall have paid this subscription is to be entitled to any number of tickets for visitors, at the rate of 6*d.* each, to be paid to the Registrar of the Royal Dublin

Society. This arrangement to be subject to modification by the Council from time to time, in case it should appear that a different mode of raising a refreshment fund would be more convenient or desirable.

5th. A book to be kept at the door to be signed by every member entering. The book to be retained in the custody of the Registrar of the Royal Dublin Society.

6th. Members of associated societies to be entitled to free admission to the library, museum, and gardens of the Society every day in the week, except Sundays and days on which they are closed by proper authority, but not to have the privilege of borrowing books or introducing visitors, nor to have the use of the conversation room.

7th. Members of the Royal Dublin Society to be entitled to become members of any of the associated societies without entrance fee, and subject only to half the annual subscriptions. Life members of the Royal Dublin Society may also compound as life members of the associated societies at half the usual rates.

8th. At least one member of the Council or governing body of each of the associated societies to be a member of the Royal Dublin Society.

The Society, while it is of opinion that no condition with reference to the publication of proceedings should be insisted on as a condition of union, at the same time thinks that arrangements which may hereafter be desirable would be facilitated if the proceedings of the various societies were printed in one uniform size and type.

Secondly. Rules have been adopted for the affiliation of provincial literary and scientific institutions and mechanics' institutes, by which the Society anticipates the following objects will be attained:—

a. The interchange of information by communications made from time to time by the affiliated societies to the Royal Dublin Society and to each other.

b. Effecting exchanges of specimens in the extension or formation of museums.

c. Affording mutual assistance to each other in endeavouring to extend the usefulness and improve the position of the entire body.

d. Obtaining for the affiliated societies, on favourable terms, all publications connected with education, science, literature, and the arts, and also parliamentary papers as far as may be practicable.

e. Effecting an interchange of privileges between the members of the several affiliated societies.

f. Encouraging the affiliated societies to establish classes for instruction in elementary branches of education, so as to prepare the students of such societies as candidates for the certificates of merit of the Royal Dublin Society.

Appendix C.

Report of Royal Dublin Society.

The following are the rules and conditions subject to which provincial societies may be admitted into union with the Royal Dublin Society :—

1. That they shall engage to furnish the Royal Dublin Society from time to time with a copy of their reports, or other printed proceedings, byelaws, rules, and regulations, and lists of their members, and of their Council or Managing Committee and officers.
2. That the president or one other member of the Council or Managing Committee must be a corporate member of the Royal Dublin Society, and that each of the affiliated societies shall pay to the Royal Dublin Society a sum of 2*l.* 2*s.* annually, so long as it shall continue in union.
3. That each of the provincial societies, having complied with the requisite conditions, may be admitted into union with the Royal Dublin Society by vote of the latter on the recommendation of its Council, and that such union may be dissolved at any time in like manner or at the request of the provincial society.
5. Each affiliated society to be entitled to a copy of all the printed proceedings and publications of the Royal Dublin Society.
6. Members of affiliated societies who are not permanently resident in Dublin, on an introduction from their secretary to the secretary of the Royal Dublin Society, shall have the privilege of free admission for a limited period to the museum, botanic garden, and library.
7. The Royal Dublin Society to procure for the affiliated societies copies of all publications they may require at the same reduced price as the Royal Dublin Society itself may procure them.
8. The Royal Dublin Society to offer special prizes for competition at its examination for certificates of merit, to be confined to such candidates as shall have attended the classes of the affiliated societies, and whose names shall be furnished to the assistant secretary of the Royal Dublin Society by the secretary of the affiliated society. The Royal Dublin Society also to defray a part of the travelling expenses of the successful candidates for the certificates of merit, the precise proportion to be hereafter fixed.

The following reports upon the several departments of the Society are now submitted :—

Botany and Horticulture.

Lectures.

In the month of April Professor Harvey delivered a course of 10 lectures on economic botany in the Society's lecture theatre, which was attended by 520 persons, averaging 52 at each lecture ; and in the month of May a second course of 10 lectures on structural and systematic botany which was attended in the aggregate

by 638 persons, or each lecture by 63 persons. Professor Harvey delivered a third course of 10 lectures at the Botanic Garden, the attendance upon which numbered 509 persons, or 50 at each lecture.

Botanic Garden.

This department continues in an efficient state, and to be highly attractive to the public.

As to the general management and condition of the garden the Council submit the following extracts from the report of Mr. Moore, the curator, on the subject:—

"The collections of plants in the conservatories as well as those which are hardy and arranged scientifically in the open grounds are in as perfect a state for all useful purposes as they have been at any previous period. A considerable number of valuable additions has been made to each of them during the past year; amongst the hardy trees and shrubs may be enumerated, *Pinus bracteata*, *Larix Griffithsi*, *Cupressus majesticus*, *Torreya grandis*, and *Olea illicifolia* as well as the new Mexican Conifers which have been raised from M. Roezel's seeds, some of which may be expected to prove important additions to a family of plants destined at no distant period to add much to the woodland beauty of the country and its economical resources.

"The increase of hardy trees and shrubs has been so great of late years that want of space for their proper cultivation, whether in the classes devoted to them or elsewhere in the garden, is much felt; and those requiring protection in conservatories have multiplied in even a greater ratio than the hardy kinds. It being manifestly impossible to provide accommodation for such extensive collection of species, good selections only of those which are important for their economical and medicinal qualities or for their beauty are all that can be cultivated in this establishment.

"To each of the families of orchids, palms, and ferns some valuable species have lately been added, the last being, at present, one of the best collections in Britain.

"The newly introduced *Begonias* with variegated leaves, also the new *Caladiums* and *Marantas* may be considered desirable acquisitions. Another plant, *Littonia modesta*, so named by Sir W. Hooker as a small tribute to the memory of the late professor of botany to the Royal Dublin Society, recently added, although not very ornamental, possesses no inconsiderable degree of interest to this collection; it is a native of Natal, and belongs to the natural order of *Liliaceæ*.

"The total number of plants added to the collection during the past year, including those which are new and those required to supply the place of others which had died out, is 735; of specimeans of seeds 545 packages have been received.

"1,137 species of plants and 40 papers of seeds have been distributed, nearly all of which have been given in exchange to public collections, as follows, 400 species to the Botanic Garden, Glasgow; 342 to the Queen's College, Cork; 147 to the Royal Botanic Garden, Kew.

Appendix C.

REPORT OF ROYAL DUBLIN SOCIETY.

"Some important donations have been received for the Botanical Museum from the British colonies and elsewhere, which have been reported to the Royal Dublin Society according as they arrived; one of those consisted of a number of large sections of the most interesting trees of Jamaica, which are either valuable for the timber they produce or or for some other economic quality they possess. For this contribution the Society is indebted to Mr. March, Honorary Member R. D. S., and the Hon. Judge O'Reilly of Jamaica, by whom this and other departments of the Society have been already enriched by many valuable donations.

"A further donation, consisting of vegetable oils, preparations of tropical fruits, gums, &c. made by the same parties has also been received.

"Having in former Reports stated my views respecting this museum, and urged on the Society its importance as a most valuable auxiliary to the means of botanical instruction afforded by the garden, I would again earnestly ask your attention to this subject, and in connexion with it to the following extract from the report of Sir W. Hooker on the Kew Botanic Gardens and Museum of Economic Botany, 1858:—

"'It is obvious that the spectacle of the garden of those living plants which yield substances valuable in commerce, the arts, medicine, and in domestic economy, when coupled with a museum where those very products in different stages of preparation are displayed, must be useful. The most precious gifts of nature, shown both in their rude condition and as adapted to his uses by the ingenuity of man, cannot fail, when thus combined, to prove of great and telling importance, fraught with instruction, and appealing forcibly to the age and understanding.'

"The conservatories and other buildings on the premises have all been kept in as good repair as their condition will admit of; but I before pointed out that the portion of the old range of conservatories still remaining is beyond the possibility of being repaired. If steps be not immediately taken to replace it, it must inevitably fall, thus entailing the destruction of the valuable collection of plants it contains.

"Plants have been supplied, as usual, to illustrate the lectures delivered within the Society's premises, and in the Museum of Irish Industry, Stephen's Green; for the use of the students in the School of Art, as well as for that of the Professor and Lecturers in the Royal College of Surgeons, and other schools of medicine in Dublin.

"Saturday being observed as a half-holiday in many of the public offices and establishments in the city, the Society has opened the gardens free to the public, on that day in each week, from two to six o'clock."

Although the opening of the garden on so many days in the week adds greatly to the labour and expense of its maintenance, yet it is satisfactory to find that the number of visitors of late years has doubled. This Department was visited by 39,853 persons during the past year.

Natural History.

Lectures.

In the month of October, J. R. Kinahan, M.D., delivered a course of lectures on Zoology, in the Theatre of the Society, which was attended by 1,655 persons, averaging an attendance of 139 at each lecture.

In the month of December, Professor Jukes delivered a course of twelve lectures on Geology, the attendance at which numbered 2,433 in the aggregate, or an average of 202 at each lecture.

Museum of Natural History.

On this Department, the Director, Dr. Carte, reports as follows:—

"In the report which I had the honour to submit last year on the progress of the Natural History Department, I mentioned the obstacles which prevented the final removal of the collections to the new Museum, some of which have been since then removed. A grant to this Department of 800*l.* for internal fittings has enabled me to take preliminary steps towards the transference of the specimens.

"In the spring of the year the Fine Arts Committee requested the use of the building for the temporary accommodation of the circulating Museum of Ornamental Art, the property of the Government, and of the auxiliary collection to be exhibited with it. This request having been acceded to, it became necessary to remove from the building several cases which had already been arranged. The exhibition lasted for nearly three months, during which time, and until the room was restored, all the arrangements for the removal of the specimens were of necessity suspended.

"In consequence of the dampness of the building, it became necessary before occupying it, to have it thoroughly heated and ventilated; to this the Committee gave their earliest attention. This is now being carried into effect by means of two of the largest sized Gurney's patent stoves placed in the lower story, the heat from which will ascend to the upper room through perforations in the ceiling, and thus it is expected the whole building will be raised to a suitable temperature.

"The expense attending this most essential work will diminish the limited funds at the disposal of the Committee, and therefore very much lessen the extent of cases which can be provided for the arrangement and display of the specimens in the Museum.

"To provide suitable cases for the upper room would require a sum of about 2,000*l.* To floor and fit up the lower room would require a like sum; and should the present stoves, as it is hoped, keep up a proper temperature, then the mere mechanical work of removing the collections would occupy but a comparatively brief space of time; especially as I have paid every attention, during the vacation and the periods of closing the Museum, to naming and classifying the specimens which are now, for the

Appendix C. — Report of Royal Dublin Society.

most part, stored in drawers and boxes ready to be placed in the new Museum whenever suitable cases shall be provided for their reception.

"Were the Society supplied with means for this object, and thereby be enabled to finish their Museum, now nearly four years in progress, but a short time would elapse before it would become a most attractive place of resort to the citizens, a highly important adjunct to the scientific departments of the Society, and an important aid to the cause of education in this country.

"During the past year, as heretofore, the collections have been extensively used by the Professors to illustrate the public lectures delivered in the Theatre of the Society, but not to the extent which they might be, if access could readily be had to the specimens; for in consequence of their being now stored in boxes, it becomes a matter of great difficulty to get them when required for such purposes.

"Many valuable and interesting additions have been made to the collections during the past year. To enumerate them all would add too much to the length of this report, but I trust I may be excused for giving the following short account of the present condition of the Cabinet of British Lepidoptera, by the Rev. Joseph Greene, of Cubley Rectory, Derbyshire, to whom the Society is indebted for his valuable services in connexion with the Department; merely premising that four years hence the collection did not contain a dozen specimens of that tribe of insects."

"'When the Committee, at my suggestion, ordered properly-constructed cabinets, friends were willing to give their aid to assist in spreading scientific knowledge by placing specimens in the Cabinet for the use of such students as wish to refer to them.

"'In compliance with the request of my esteemed friend, Dr. Carte, I have drawn up a few remarks relating to the state of the collection of British Lepidoptera in the Society's Museum, and, considering how short a period has elapsed since commencing it, I think its present condition must be deemed highly satisfactory. I should remark, that as yet it only extends to the end of the *Geometræ*.

"'During the past few days several new species have been added to the British lists.

"'On the other hand, some species which have been retained as British, on the authority of insulated specimens said to have been captured many years since, may safely be dropped. It is therefore scarcely possible to draw up a perfectly accurate list of the number of British species, but the following will be found nearly correct:—

Rhopalocera	65	species.
Heterocera	35	"
Bombyces	94	"
Noctuæ	288	"
Pyrales	65	"
Geometræ	264	"
	811	"

" ' Of the 65 species of Rhopalocera the Society possesses one or more specimens of - - - - 62 species.
of the 35 Heterocera - - 21 „
of the 94 Bombyces - - 73 „
of the 288 Noctuæ - - 211 „
of the 65 Pyrales - - 45 „
of the 264 Geometræ - - 185 „

597 „

" ' Thus leaving 214 species only as desiderata.

" ' The number of specimens in the cabinet considerably exceeds 2,000.

" ' Since the publication of M. Guinée's elaborate work many alterations have taken place in the arrangement and nomenclature of our British Lepidoptera, and accordingly I took advantage of the opportunity afforded me by my recent stay in Ireland to reconstruct the collection with all the latest improvements.

" ' I am happy to be able to say that it is now in the best possible condition, neatly set, free from mites, mould, grease, &c., and in these respects may safely take its stand side by side with the best public collection in the kingdom.

" ' This special department also is indebted to Thomas Chapman, Esq., of Glasgow, and Edwin Birchell, Esq., of Sandford Terrace, Dublin, for their donations of some very rare specimens.'

" In conclusion, I may observe that after the expenses of heating are defrayed the remainder of the Parliamentary grant, about 700*l.*, will finish not more than about one-fourth of the upper apartment with cases; were this portion at once filled with specimens it would be a comparatively useless display. I therefore cannot urge too strongly on the attention of the Society the paramount importance of finishing the Museum and enabling their most valuable and daily increasing collections to be properly displayed for the benefit and instruction of the public."

Chemistry.

Lectures.

In the month of November W. K. Sullivan, Ph. D., delivered a course of 12 lectures on chemistry, which was attended by 1823 persons, averaging 152 at each lecture.

In consequence of the death of Professor Davy, and the arrangements in progress for the appointment of his successor, the usual course of lectures and laboratory instruction in agricultural chemistry were necessarily suspended. The negotiations with the Department of Science and Art on the subject having been satisfactorily concluded, the Society, previous to the month of November, issued advertisements for a Professor of Agriculture, whose duties should be to deliver courses of lectures on that subject, to have the care of and superintendence of instruction in agricultural chemistry in the Society's laboratory, and to perform agricultural analysis for the public on a regulated scale of charges, and to superintend the arrangement of the Agricultural Museum.

Appendix C. Report of Royal Dublin Society.

Dr. Edmund William Davy having been elected as professor, is now engaged in making the requisite arrangements for the fulfilment of these duties.

Physics.

In the month of January Professor Barker delivered a course of 20 lectures on physical science in the Society's theatre, which was attended by 3,915 persons, averaging an attendance of 195 at each lecture; and in the month of October a second course of 12 lectures, attended by 2,427 persons, averaging 202 at each lecture.

French Literature.

In the month of February M. Desiré Pontet delivered *gratuitously* a course of eight lectures in the French language on the French Literature of the 19th Century, the attendance at which numbered 3,891 in the aggregate, being an average of 486 persons at each lecture.

Evening Meetings

For the Discussion of Subjects connected with Science and Art.

During the session commencing November 1857 and terminating June 1858, eight meetings were held, which were attended by 1,596 persons, or by an average of 199 at each meeting.

The following are the titles of the communications read :—

1857 :—November 27.

Rev. Professor Haughton, F.T.C.D.:—On the Tides and Tidal Currents of the Irish Sea and English Channel.

Professor William Barker:—A Memoir of the late Professor Davy, F.R.S.

1858 :—January 5.

W. R. Sullivan, Ph.D.:—A paper by Mr. Patrick Buchan on the Composition of the Iron Ores of the Connaught Coal Field, with some Observations on the Facilities which it affords for the Manufacture of Iron.

Dr. Barton on the Necessity of Ventilation in Crowded Buildings.

January 29.

Captain Wallop Brabazon:—On the Gulf Stream, its Magnitude, Source, and Direction, and its supposed Effect on the Climate of Great Britain and Ireland.

February 26.

Professor Kinahan:—On Zoological Specimens collected in the Gulf Stream.

March 26.

Thomas Grubb:—On a New Patent Photographic View Lens.

Thomas Grubb:—On a New Table Microscope.

Edward Haughton, M.D.—On Hot Air Baths.

April 30.

John Rigby:—On the Rotation of a Body round a Fixed Point. Part 1st, the Theory of the Gyroscope.

Joseph Fisher:—On Agricultural Education.

May 28.

John Rigby:—Second Part of his Paper on the Rotation of a Body round a Fixed Point, entitled "The Deviation of Rifle Bullets."

Sir James Murray:—On Sanitary Improvements for the Health of Towns, &c.

Professor Kinahan read a paper by Spence Bate, F.L.S.:—On the Diastylidæ.

June 6.

Thomas Miller:—On the Opinion of Englishmen and Scotchmen who had settled agriculturally in Ireland upon the Climate, Soil, and People of Ireland.

Library.

In consequence of the suite of rooms intended for the library being still occupied by the Natural History Museum, all the evils under which this department has for years laboured, which so greatly impair its usefulness, still exist. The Council, however, expect that before long some of the rooms at least will be rendered available for library purposes.

On this department the librarian reports as follows:—

"During the year which ended on December 30th the number of public readers in the library (exclusive of members of the society and of persons who came to consult the Parliamentary papers and the specifications of patents which are open for the public inspection) was 8,413, giving a daily average of 30 readers, the library having been open on 282 days. In past years the daily average has reached 45, and the diminution may be attributed partly to the cause assigned in my last annual report, namely, the more liberal opening of the library of Trinity College."*

The number of works lent out during the same period amounts to 3,861.

"The supplemental catalogue of books added to the library from 8th November 1849, to 3rd June 1858 contains in addition a very large proportion of books received up to December 31st, that I might be able to include as many as possible under the later letters, as the printing proceeded, it has been made up for press in half sheets only. The whole is now printed, and the last sheets are being made up. When the index is completed, a new desk-catalogue prepared to receive yearly additions is ready to be set up, the slip catalogue will be rendered perfect, and the members will have in the catalogue of 1859, the supplement of 1850 and this supplement of 1858 bound together a perfect catalogue for home use."

Agricultural Department.

In the report of last year it was stated that the society had resolved to erect a suitable building on its agricultural premises to be used principally for the accommodation of the valuable animals exhibited at its spring and winter shows.

The Council have now to report that the building which had been commenced at the end of the year 1857 was, in consequence

* This great library was formerly open to graduates only; students and other persons, under certain restrictions, are now admitted.

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REPORT OF ROYAL DUBLIN SOCIETY.

of the great exertions of the contractor, sufficiently completed so as to enable it to be used on the occasion of the Society's show in the April following.

By reference to the report of last year it will appear that the Society determined that the cost of this building should be defrayed by a fund raised by general subscription. A sum of 2,000*l.* so collected together with 1,500*l.* advanced by the Society have already been expended, still a considerable sum is required for the erection of galleries, the construction of a permanent flooring, and for internal painting and decoration, works necessary to be accomplished before the building can be rendered suitable for the various public purposes for which it is adapted.

In consequence of the Society's exhibitions being open to competitors from all parts of the United Kingdom, the demand for increased accommodation has become most pressing while the space heretofore allotted to the exhibitions has year by year, in consequence of the erection of the Museum of Natural History, and of the National Gallery, just commenced, become proportionably contracted. To remedy this state of things it is proposed that should Parliament supply the Society with funds to purchase adjoining premises as an auxiliary cattle yard, the space thereby afforded as well as by galleries when erected in the new hall, will provide the Society with an ample area for exhibitions of double the extent of those hitherto held.

Spring Cattle Show.

This Show was held on 27th April and three following days, some of the results of which are exhibited in the following Table :—

Description of Stock.	Entries or Lots.	Prizes.		
		Money.	Medals.	Certificates.
		£ *s.* *d.*		
Bulls - - - -	226	33 0 0	8	1
Cows and heifers - -	119	— —	25	4
Fat stock - - -	79	— —	12	2
Sheep (lots) - - -	102	42 0 0	3	1
Swine (lots) - - -	150	63 0 0	—	7
Horses - - - -	31	18 0 0	5	—
Poultry (lots) - - -	178	23 0 0	20	3
Implements - - -	796	Nil.	Nil.	Nil.
	1681	179 0 0	73	18

The "Irish Farmers' Gazette" challenge cup was this year won by Mr. James Douglas of Athelstaneford, Drem, North Britain.

His Excellency the Lord Lieutenant visited the show and presided at an evening meeting for the announcement of the prizes awarded, at which 470 persons were present.

The exhibition was visited by 10,565 persons.

Winter Show of Fat Stock and of Farm and Dairy Produce.

The shelter and comfort which have been provided by means of the Agricultural Hall for all description of stock have enabled the Society to resume its exhibitions of fat cattle in conjunction with its annual shows of farm and dairy produce.

That of the past year was held on the 23rd and 24th of November, and was visited by 1,594 persons.

The principal results of the show may be seen by the following tables:—

Farm Produce.

Description.	Entries.	Prizes.		
		Money.	Medals.	Certificates.
Vegetable Produce.				
Division 1.				
Plants cultivated for their seeds and straw:—				
Class A.—Cereals -	66	— —	8	—
Class B.—Leguminous seeds - - -	40	— —	6	—
Class C.—Oil-producing plants - - -	8	— —	2	—
Class D & E.—Turnip and mangold seeds -	20	— —	3	—
Division 2.				
Plants cultivated for their bulbs, tubers, or roots -	212	22 0 0	—	12
Division 3.				
Plants cultivated for their herbage - - -	20	5 10 0	—	1
Division 4.				
Plants yielding fibre -	40	3 0 0	—	—
Nine general collections (items) - - - -	409	8 0 0	2	—
Animal Produce—				
Consisting of butter, honey, wools, frieze, &c., &c. -	36	12 10 0	5	2
Live Stock.				
Fat cows and heifers -	42	— —	16	—
„ oxen - - -	16	— —	6	—
„ sheep - - -	18	— —	11	—
„ swine - - - -	22	— —	10	—
Poultry - - - -	103	25 10 0	—	—
	1,052	76 10 0	69	15

Appendix C. Report of Royal Dublin Society.

Weights of some of the lots of roots to which prizes were awarded :—

	Roots.	Lbs.
Long red mangold wurtzel	6	138
Orange globe „ „	6	132
Yellow globe „ „	6	148
Skirvings purple topped Swede turnips	6	133
Aberdeen turnips	6	90
Sugar beet	6	86
White Belgian carrots	12	60
Jersey parsnips	12	49
Field cabbage, drumhead variety	4 heads	170

A selection of the green and cereal crops was exhibited in the month of December at the Smithfield Club Show, London, where it was attended by Mr. Corrigan, the Curator of the Society's Agricultural Museum, who was instructed to afford the necessary information to inquirers respecting the specimens exhibited.

The collection attracted the marked attention of the visitors, especially that of His Royal Highness the Prince Consort, who spent a considerable time in examining the specimens.

Agricultural Museum.

In consequence of the erection of the Agricultural Hall, this department of the Society has been unavoidably closed since the date of the last Report, and before it can be advantageously reopened, considerable alterations must of necessity be effected in the building, for which the Council regret the funds are at present very inadequate.

The Council are, however, at present engaged in making temporary arrangements, whereby it is hoped that before long, the extensive collection of agricultural produce and implements recently augmented by a collection of produce and casts obtained from Messrs. Lawson of Edinburgh, may be exhibited to the public.

The Curator of the Museum attended by direction of the Committee of Agriculture, the meeting of the Royal Agricultural Society of England, so as to enable him to become acquainted with the most recent improvements in agricultural appliances which are sure to be exhibited at that great Show.

Department of Fine Arts.

School of Art.

The School of Art has made satisfactory progress during the past year.

The names of students on the books numbered 440, which, compared with 404, the number during the previous year, shows an increase of 36 students.

Nineteen local medals have been awarded at the annual examination in October, besides 58 prizes for free-hand drawing.

A national medallion has been awarded to Mr. John Woodhouse.

In the Report of last year, the liberality of the Chairman of the Committee, in presenting a sum of money to be expended on prizes for competition by students in the stages of figure painting from life, and landscape painting was referred to. These prizes excited considerable competition.

[Here follow the names of the successful students.]

The distribution of prizes as above took place in the Society's theatre on December 21st, at which his Excellency the Lord Lieutenant presided; 430 persons were present on the occasion.

In accordance with the regulations of the Department of Science and Art, arrangements have been made for affording instruction in elementary drawing to the children of parochial and other poor schools—a scheme from which much good is anticipated.

Considerable success has attended the experiment of having a class formed for instruction in the art of lithography. Four pupils have been engaged in this study, in which they have evinced a considerable degree of skill.

The Council are happy to acknowledge the kindness of Messrs. Catterson Smith and Charles Brien in lending for the use of the students valuable paintings from their collections, of which they have largely availed themselves, and of which they have produced some excellent copies.

One student, Joseph Kennedy, has been sent to the training school at South Kensington, where he is prosecuting his studies.

Considerable improvements have been effected in the internal arrangement of the school-rooms, with the view of securing a greater amount of comfort and convenience to both students and teachers.

The Council submit the following abstract of receipts and expenditure of the school for the year ending 30th September 1858:—

Expenditure.

	£	*s.*	*d.*
Head master, share of students' fees - -	96	14	11
Second master, do. - -	93	17	8
Same, allowance from Society in aid of salary -	20	0	0
Pupil-teachers, and allowances to students to visit Manchester Exhibition - - -	17	10	0
Attendants' wages - - - -	52	13	1
Examples purchased and repairs of casts -	9	4	2
Repairs and fittings - - - -	22	11	10
Gaslight and fittings - - - -	19	18	6
Advertising - - - - -	12	18	0
Coke, coal, &c. - - - - -	11	0	0
Two stoves purchased - - - -	31	7	2
Stationery and sundry small expenses - -	13	13	2
	£401	8	6

Appendix C.

REPORT OF ROYAL DUBLIN SOCIETY.

Receipts.

	£	s.	d.	£	s.	d.
By fees received from students -	302	9	3			
„ allowance from Department for prizes - - - - -	2	19	11			
				305	9	2
Balance paid by Royal Dublin Society -				£95	19	4

October 1st, 1858.

Lectures.

Robert D. Lyons, M.D., Honorary Professor of Anatomy in connexion with the Fine Arts, delivered a course of 12 lectures which was attended by 503 persons, averaging 42 at each lecture.

At its conclusion an examination was held on the subject of the lectures, the result of which Dr. Lyons has reported as follows :—

"I have the honor to report that I have this day held an examination for the medal which the Committee of Fine Arts proposed to grant for the encouragement of the study of anatomy in connexion with the Fine Arts.

"Three candidates presented themselves for examination and it gives me great pleasure to be able to state that the answering has been of the most satisfactory nature, evincing on the part of each candidate a very intimate acquaintance with those parts of anatomy of most direct importance to the artist.

"The examination was conducted on the plan devised and carried out by me on former occasions, which renders it impossible for any candidate on mere book knowledge to carry off the prize from others practically conversant with artistic anatomy.

"The examination consists of three parts, viz., one, *vivâ voce;* the second, the demonstration of the anatomical elements on casts or drawings submitted by the candidates ; and third, the demonstration of the salient anatomical features of the osseous and muscular anatomy on the bones of the skeleton and on figures in the gallery.

"Again expressing my entire satisfaction with the result of the examination, I have the honor to return the names in the following order :—John Woodhouse, first ; Henry Crowley, second ; Arthur J. Mayne, third.

"The first became entitled to the medal, but owing to the excellent answering of the second and third, I beg leave to recommend them both for certificates of merit."

Art Exhibition.

The Department of Science and Art having intimated its intention of sending the Circulating Museum of Ornamental Art to Dublin, the Committees of Fine Arts and of Manufactures made arrangements for forming an auxiliary collection of works of art to be exhibited in connexion with the Government collection, and the Committee of Natural History having placed the new museum building at the disposal of the Committee of Management, active steps were taken to secure a useful and creditable exhibition.

These efforts were completely successful, and through the liberality of the nobility, gentry, public bodies, and manufacturers resident in Dublin and the neighbourhood, a collection was formed which entirely filled the large building in which the exhibition was held.

According to the catalogue issued by the Committee the contributions from the local, public, and private sources before referred to amounted in number to 3,147, exclusive of those in the Government collection. With respect to the estimation in which this collection and that of the Government were held by the public, the Council deem it unnecessary to state more than the fact that the receipts amounted to the large sum of 1,072*l.* 2*s.* 3*d.* inclusive of the proceeds of the sale of catalogues.

The Exhibition was opened on Easter Monday, the 6th of April, under the auspices of his Excellency the Earl of Eglinton and Winton, the President of the Society, who was present on the occasion, and took part in the proceedings; and although it was not originally intended to be kept open longer than the middle of May, yet in consequence of the desire evinced by the public the Exhibition was not closed until Saturday the 19th of June.

The Exhibition was therefore open exactly eleven weeks or (exclusive of Sundays) sixty-six days; during which time it was visited by 55,318 persons, thus giving an average of upwards of 838 visitors per diem. Of this number 1,661 were holders of season tickets, 27,024 were parties who paid for their admission during the day, and the remainder on the evenings on which the Exhibition was open, viz., Mondays, Wednesdays, and Fridays, at the charge of 3*d.* each person, or of 1*d.* if the admission tickets were obtained through a member of the Society, or an exhibitor, being an employer, to whom the tickets were issued at the rate of 1*s.* per dozen.

In order to extend the opportunity of witnessing the Exhibition to those who could not otherwise have obtained access to it, the Committee issued a circular to all the parochial and other charity schools in and about Dublin inviting their children, in company with their teachers, to visit it gratuitously between specified hours each day; 4,500 children and teachers availed themselves of this privilege.

Arrangements were also made so as to afford to the students of the Society's School of Art, and to others willing to avail themselves of the knowledge, opportunity, and facility for copying the various works of art exhibited, consistently with a due regard to their safety; the result of which was, that twenty-one students copied, with the permission of the owners, thirty-eight objects in the Hall, including seventeen copies of the photographs of Raffaelle's etchings from the Louvre Galleries. The copies thus made were hung up for public inspection during the last week of the exhibition.

The average time during which each pupil was engaged in the making these copies was 264 hours.

The Council have great satisfaction in reporting, that from the opening of the Exhibition to its close, no accident occurred to

Appendix C. Report of Royal Dublin Society.

any one of the valuable objects exhibited, notwithstanding the immense number of visitors, as before stated, that inspected them; a fact which is not only highly creditable to the visitors themselves, but speaks much for the unremitting attention and untiring zeal in promoting the success of the undertaking, which was uniformly exhibited by Mr. C. B. Worsnop, the officer in charge of the Government collection, who was not absent from the Exhibition a single day, and was always ready to afford the Committee of Management his valuable advice and assistance in every way in which they could be of use, his sole object seeming to be to carry out the intentions of the Department by making the Exhibition as useful to all classes as possible.

The Gallery of Casts and Statues was visited during the year by 3,864 persons.

The Society, as usual, accommodated several kindred associations with the use of its premises for their meetings; of this permission, the Royal Zoological Society, the Dublin Chemical Society, the Dublin Photographic Society, and the Dublin Statistical Society, availed themselves. The Lecture Theatre was placed at the disposal of the last-named Society for the delivery of their Barrington Lectures on Political Economy, consisting of four lectures, which were attended by 338 persons, averaging eighty-four at each lecture.

The Council submit the following as the summary of the attendance of the public during the year 1858 :—

Botanic Garden	39,853
Museum of Natural History (four months)	8,968
Library (readers exclusive of members)	8,413
Statue Gallery	3,864
Evening Meetings (eight months)	1,596
Agricultural Exhibitions	12,159
Distribution of Agricultural Prizes	470
School of Art, number of Students	440
Distribution of Art Prizes	430
Art Exhibition	55,318
Lectures on Physics	6,342
——— Chemistry	1,823
——— Zoology	1,655
——— Geology	2,433
——— Botany	1,667
——— Anatomy, in connexion with Fine Arts	503
——— French Literature	3,891
——— Political Economy	338
Total	150,363

By order of Council,

W. E. Steele, M.D.,
Assistant Secretary.

January 1859.

APPENDIX D.

Report of the Council of the Royal Zoological Society of Ireland for the Year 1858.

To the Lords of the Committee of Privy Council on Education.

My Lords,

Referring to the report of last year, the Council has much gratification in stating that during the year just concluded a more than usual increase has taken place in the number of persons visiting the gardens, and this they attribute to the increased attraction which a large addition to their stock of animals has enabled them to bring before the public.

The number of visitors and receipts for the two years are as follow:—

	Visitors.	Receipts. £	s.	d.
1858	144,542	857	18	10
1857	127,598	782	13	6
Increase in 1858	16,944	£75	5	4

Of the above numbers, the *penny* admissions, on Sunday afternoons and summer evenings, stand thus:—

	Penny Admissions.	Receipts. £	s.	d.
1858	125,515	522	19	7
1857	110,166	459	0	6
Increase of penny admissions	15,349	£63	19	1

Thus, while the increase of visitors of all classes shows an aggregate on the year of nearly 17,000, that of the class admitted at a penny makes up fifteen-seventeenths of the whole. This fact sufficiently proves that the gardens are steadily answering the great object for which they have been established, that of providing rational recreation and instruction to the humbler ranks of our fellow citizens; and the Council can still bear witness to the continued good conduct of the crowds admitted at a rate so very moderate.

The repair of old buildings and the construction of new have, during the past year, cost much money; but the purchases of new animals have been greater than in most years, a sum of upwards of three hundred pounds having been so appropriated. A Bengal tiger and a male nylgau are amongst the most important acquisitions.

Four young lions have been born, of which three have been successfully reared. Several birds and quadrupeds, an alligator,

Appendix D.

REPORT OF ROYAL ZOOLOGICAL SOCIETY OF IRELAND.

and a lepidoscrea have been presented during the year. The losses by death have not been greater than usual.

In conclusion, the Council trusts that the accompanying statement of expenditure will show that the Society continues to fulfil its educational mission.

Signed by order of the Council,
W. H. HARVEY, Hon. Secretary.

RETURN of ADMISSIONS for 1858.

	No.	Receipts. £	s.	d.
Members, free	3,129			
Public, at 6*d.*	12,021	300	10	6
„ at 3*d.*	2,755	34	8	9
„ at 1*d.*	125,515	522	19	7
Public schools, free	1,122			
Total visitors to gardens in 1858	144,542	£857	18	10

CHARGE.

	£	s.	d.
Balance of last account	71	15	3
Government grant	500	0	0
Receipts at door as above	857	18	10
Members' subscriptions and admission fees	234	5	0
Incidental receipts	7	7	5
Young animals sold	6	10	0
Balance	51	11	11½
Total	£1,729	8	5½

DISCHARGE.

	£	s.	d.
Animals purchased	286	19	7½
Food for animals	521	19	6½
Incidental expenses	247	11	2½
Salaries and wages	318	18	4½
Buildings and grounds	346	19	8½
Interest on debentures	7	0	0
Total	£1,729	8	5½

OFFICERS of the COUNCIL.

President.

Domk. J. Corrigan, M.D.

Ex-Presidents.

The Archbishop of Dublin.
The Duke of Leinster.
The Marquis of Kildare.
Lord Talbot de Malahide.
Major-Gen. Portlock.

Vice-Presidents.

Charles Benson, M.D.
Robert Callwell, M.R.I.A.
Lieut.-Col. Larcom.
Edward Hutton, M.D.
Jacob Owen, M.R.I.A.

Secretaries.

William H. Harvey, M.D.
Hans Irvine, M.D.

Treasurer.

Thomas Hutton, D.L.

Council.

William Andrews, M.R.I.A.
Francis Wm. Brady.
Lieut.-Col. Browne.
John Flood.
Samuel Gordon, M.D.
George William Hatchell, M.D.
J. Beete Jukes.
John Lentaigne, M.D.
Major Leach, R.E.
Sir Henry Marsh, Bart.
B. G. McDowell, M.D.
Robert H. Moore.
M. J. O'Kelly.
Gilbert Saunders.
Thomas W. Warren.

ROBERT J. MONTGOMERY, Assistant Secretary.

APPENDIX E.

REPORT TO THE LORDS OF THE COMMITTEE OF PRIVY COUNCIL FOR EDUCATION, FROM THE COMMITTEE OF LECTURES, DUBLIN CASTLE, FOR THE YEAR ENDING 31ST DECEMBER 1858.

THE Committee has to report that during the past year it approved of a Programme of Public Lectures, consisting of ten courses, to be delivered in the theatre of the Royal Dublin Society and the Museum of Irish Industry during the session commencing in October 1858. (Vide Appendix I.)

Eleven courses of provincial lectures have also been delivered under its sanction, and a twelfth is in progress (Appendix II.) Many applications were received for other courses, which the Committee was unable to comply with (Appendix III.)

The average attendance at these lectures amounts to nearly 200, being an increase of about one third over that of the preceding year. The average number of candidates at the examinations has increased in about the same proportion, amounting now to about twenty at each examination.

The lectures are calculated to supply in some degree a want which is much felt in this country, except in the metropolis, that of teachers competent to instruct in the various branches of natural and physical science. During the past summer the Secretary to the Committee visited six of the towns at which examinations were to be held, viz., Cork, Bandon, Waterford, Limerick, Drogheda, and Londonderry, one of the objects of his visit being to promote the formation of classes for instruction preparatory to the examination. The different local committees, as stated in their reports, made every exertion to accomplish this desirable object. Their efforts have, however, met with but partial success, owing, as is stated, to the impossibility in most cases of procuring competent teachers, the subjects to be examined in not forming part of the ordinary routine of school education. In some instances, however, the matter has been taken up with laudable zeal by the teachers of schools, both National and private, and, the Committee is happy to be able to say, with success.

In the hope of stimulating teachers to turn their attention to these subjects, the Committee in the course of the past year removed the restriction which prohibited teachers from presenting themselves at the examination. They are now allowed to compete for the bronze medal. Several have already successfully availed themselves of this privilege.

An important change has been made this year in the manner of conducting the examinations, and one calculated to give them a more substantial character. They are now separated from the lectures, although of course confined to the subjects lectured upon. A moderate interval of time is suffered to elapse between the

Appendix E. PROVINCIAL LECTURES, IRELAND.

conclusion of the lectures and the examination, in order to allow the candidates time to study the subject. The questions are no longer prepared by the lecturer, but by the examiner, who afterwards reports on the answers. Besides removing the objections which existed to the examination papers being set by the same person who had been engaged in preparing the class for examination, a uniformity of standard is now secured in the character and difficulty of the questions, which hitherto was very far from being the case. This change has been received with much satisfaction by the local institutions, as attested by their reports to the Committee ; and although it has had but a very partial trial, having only come into operation during the latter part of the year, yet it seems to have worked well, the examiners having reported that the answering generally is of a superior character to what they have hitherto usually met with.

The examiners for the present year are :—

Botany and Zoology : William H. Harvey, M.D., Professor of Botany, T. C. D.

Chemistry : John Blyth, M.D., Professor of Chemistry, Queen's College, Cork.

Geology : J. Beete Jukes, F.R.S., Local Director of the Geological Survey of Ireland.

Natural Philosophy : G. Johnstone Stoney, A.M., Secretary to the Queen's University in Ireland, and lately Professor of Natural Philosophy, Queen's College, Galway.

A change has occurred during the year in the Committee, caused by the resignation of Dr. Sidney, in consequence of his appointment as Secretary to the Committee. The Royal Dublin Society has elected the Rev. Dr. Lloyd, S.F.T.C.D., F.R.S., and V.P.R.D.S., to fill the vacancy.

MAZIERE BRADY, Chairman.

I.

COURSES of PUBLIC LECTURES appointed by the COMMITTEE to be delivered in the THEATRE of the ROYAL DUBLIN SOCIETY and MUSEUM OF IRISH INDUSTRY, during the SESSION of 1858-59.

Day Classes before Christmas.

1. Zoology.—12 Lectures, by Professor Kinahan, in the Theatre of the Royal Dublin Society, commencing 11th October 1858, at 4 o'clock p.m.

2. Physics.—12 Lectures, by Professor Barker, in the Theatre of the Royal Dublin Society, commencing 27th October, at 4 o'clock p.m.

3. Chemistry.—12 Lectures, by Professor Sullivan, in the Theatre of the Royal Dublin Society, commencing 14th November, at 4 o'clock p.m.

4. Geology.—12 Lectures, by Professor Jukes, in the Theatre of the Royal Dublin Society, commencing 1st December, at 4 o'clock p.m.

Evening Classes before Christmas.

5. Physical Geography.—12 Lectures, by Professor Jukes, in the Theatre of the Museum of Irish Industry, commencing 8th November, at 8 o'clock p.m.

6. Zoology.—12 Lectures, by Professor Kinahan, in the Theatre of the Museum of Irish Industry, commencing 30th November, at 8 o'clock p.m.

Day Classes after Christmas.

7. Botany.—12 Lectures, by Professor Harvey, in the Theatre of the Royal Dublin Society, commencing 9th May, at 4 o'clock p.m.

8. Botany.—12 Lectures, by Professor Harvey, in the Gardens of the Royal Dublin Society, at such time as the Council may arrange.

Evening Classes after Christmas.

9. Physics.—12 Lectures, by Professor Barker, in the Theatre of the Royal Dublin Society, commencing 3rd January, at 8 o'clock p.m.

10. Chemistry.—12 Lectures, by Professor Sullivan, in the Theatre of the Museum of Irish Industry, commencing 2nd May, at 8 o'clock p.m.

Appendix E.

PROVINCIAL LECTURES, IRELAND.

II.—RETURN of the RESULTS of PROVINCIAL

—	Places.	Lecturers.	Subjects.	Time of Delivery of Lectures.
1	Belfast	Professor Hodges	Agricultural Chemistry	June
2	Strokestown	Dr. John Barker, M.R.I.A.	Heat and Electricity	July
3	Parsonstown	Dr. Lover	Electricity and Magnetism	July
4	Ballymahon	Professor Murphy	Agricultural Chemistry	July
5	Carrickfergus	Professor Kinahan	Zoology	August
6	Aughnacloy	Wm. E. Steele, M.D.	Agricultural Botany	August
7	Waterford	Professor Sullivan	Chemistry of Food	September
8	Bandon	Dr. Shaw, F.T.C D.	Astronomy	September
9	Cork	Dr. Shaw, F.T.C.D.	Astronomy	September and October.
10	Londonderry	Dr. Wm. Barker	Electricity and Magnetism	October
11	Drogheda	Wm. H. Baily, F.G.S.	Geology and Palæontology	November and December.
12	Limerick	E. W. Davy, M.B.	Agricultural Chemistry	January

LECTURES in IRELAND during the Year 1858.

Average Attendance.	Time of Examination.	Number of Candidates.	Prizes awarded.	Medals awarded.
104	17th July	29	1. Edward Hodges. 2. William Watt. 3. Eccles Rice Coates. 4. John McNeill. 5. Robert Cleeland. 6. Walter McDonnell. 7. William Smith. 8. Malachy Kilgarriff. 9. Henry A. Reid. 10. Jas. B. Elliott. 11. Joshua Reid.	Edward Hodges. William Watt.
120	20th July	23	1. Emily Curran. 2. Charlotte Burroughs. 3. John McGreevy. 4. H. G. Curran.	Miss Emily Curran.
76	21st July	5	1. John C. Kirwan.	
124	22nd July	23	1. Luke Farrell. 2. W. T. Ratigan. 3. James Connaughton. 4. Thomas Costello.	
186	30th August	12	1. Mabel Willson. 2. John Linn, junior. 3. John Blair White. 4. John Linn, senior.	Miss Mabel Willson.
40	3rd September	11	1. Martin Cave. 2. George Smith.	
375	19th October	35	1. W. J. Sharpe. 2. James Budd. 3. Peter McGann, 4. Anna Peet. 5. Edward Garnett. 6. Mary Peet. 7. James Mooney. 8. Thomas Norton. 9. Margaret Peet. 10. Louisa Peet.	Wm. Johnston Sharpe. James Budd. Edmond McSweeny (Teachers).
160	28th October	17	1. John B. Murray. 2. A. O. Hayes. 3. James Hogan. 4. Penelope Wheeler. 5. Robert Mayne. 6. Thomas Perrott. 7. Abraham Stanley. 8. James Hurford.	John B. Murray.
650	10th November	26	1. Elizabeth Ballard. 2. John B. Murray. 3. Alfred J. Harvey. 4. James Hickson. 5. Anna Murphy. 6. Maurice Day. 7. John F. Popham.	Wm. John Knight (Teacher). Elizabeth A. Ballard.
306	29th November	23	1. Robert McGirr. 2. James Conolly. 3. David Mooney. 4. John M. F. Graham. 5. Robert Moorhead. 6. William H. Gilmore.	
52	20th December	4	1. William Williams. 2. Hugh Leonard. 3. George Matthews.	William Williams.
90	1st February	33	1. James C. Ledger. 2. Henry Seymour. 3. Joseph Yeates. 4. Charles Dawson. 5. Thomas Browne. 6. Thomas W. Frost. 7. Michael Quin. 8. Daniel O'Leary. 9. Benjamin M. Brew. 10. Patrick Cleary. 11. James McNamara. 12. John Bowdren.	James C. Ledger. Henry Seymour.

Appendix E.

PROVINCIAL LECTURES, IRELAND.

III.

NAMES of PLACES from which APPLICATIONS for LECTURES were received, which the COMMITTEE was unable to comply with.

Ballina.
Ballymena.
Carlingford.
Cork Royal Institution. 2nd Course.
Co. Cork Agricultural Society.
Dungannon.
Glenarm, Co. Antrim.
Kilrush.
Newry.
Swords.

APPENDIX F.

Annual Report of the Director of the Industrial Museum of Scotland.

Laboratory of the Industrial Museum of Scotland,
Sir, 1st January 1859.

The progress of the Industrial Museum of Scotland during last year may, as in preceding reports, be appropriately discussed under the four divisions of Museum, Laboratory, Lectures, and Library.

I. The Museum proper has received many additions. In the department of building stones a systematic series of examples of the rocks of the Lothians has been deposited by the officers of the Geological Survey. Thirty cut cubes, representing the more important building stones of the north of Ireland have been acquired by purchase. Pieces of stone from the Sebastopol docks have been presented by Lord Alex. Russell, and a fine slab of flexible sandstone from India by Colonel Seton Guthrie. A block of polished jasper, and other specimens, as well as tools illustrating the modes of working Scotch pebbles for the jeweller, have been purchased from Mr. Gavin Young, who is engaged in supplying a full set of illustrations of lapidary operations. J. Graham, Esq., of Manchester, has presented a large ammonite and other fossils illustrative of the Bristol Oolite.

In metallurgical raw materials, the Duke of Buccleuch has made further additions to the examples of the Wanlockhead lead ores, and collateral products already presented to the Museum; his Grace's liberality in this respect having been made fully available through the zealous co-operation of Mr. T. B. Stewart of the Wanlockhead Works. From the Leadhills lead mines the rarer ores and accompanying minerals have been presented by William Muir, Esq., of Leith. The Duke of Argyll has presented a suite of specimens of the Argyllshire nickel ores. A valuable collection of the silver, copper, and lead ores wrought at Freiberg in Saxony, illustrating the stages in their metallurgical treatment, have been procured at small cost, through the kindness of the Professors attached to the Freiberg Mining School. The Royal Commissioners of the Exhibition of 1851 have sent a case of the Dean Forest iron ores. Through Mr. Meldrum, of Bathgate, a section has been obtained of the Torbanehill mineral seam. Mr. Archibald Geikie, of the Geological Survey, has sent a fine specimen of Graphitic Kish, and one of titaniferous slag, both from the Kinneil Ironworks. A highly interesting series of minerals, collected by Dr. Livingstone in his African journeys, has, mainly through the good offices of Sir Roderick Murchison, been deposited in the Museum.

In the metallurgical series an admirable suite of specimens, illustrating the manufacture of malleable iron, as prosecuted at

Appendix F. — Industrial Museum, Scotland.

the Dundyvan Ironworks, has been presented by Mr. J. B. Begg. Mr. John Chubb has presented a beautifully graduated series, illustrating all the stages in the manufacture of a lock and key, besides several valuable completed locks. Mr. Mortimer, of Edinburgh, has presented a similar series, exhibiting the stages in the production of a gun-barrel. The Department of Science and Art have presented examples of modern Egyptian silver-work and a casting in bronze. Specimens of the rarer metals, including those of the alkalis, have been procured from Dr. Matthiessen, their preparer. Mr. Sturrock has sent an interesting specimen of zinc-fume, obtained in the reducing crucibles. Beautiful examples of the silver and brass work of Iceland have been purchased through the kindness of R. M. Smith, Esq., who recently visited the island. Through the same gentleman, examples of the metallic implements employed by the inhabitants have been obtained from the Faroë islands. A fine specimen of a damascened steel knife, taken from the Lucknow armoury, has been presented by Dr. Fayrer, formerly resident surgeon in that city. The Commissioners of the Great Exhibition of 1851 have presented illustrations of horse-shoeing; of the manufacture of metal buttons; of fishing-hooks, and other angling implements; and of metallic coach furnishings. Several French bronzes have been acquired by purchase, as well as examples of the interlaying of silver and glass applied to the construction of ornamental drinking glasses and the like.

In the department of models, machines, and tools, the following objects have been presented:—Models of canoes and implements from the Hudson's Bay Company, through the good offices of Sir George Simpson, and the courtesy of Mr. Hargrave and Mr. Anderson, of the Company's service. Model of a paper-beating engine, from Henry Bruce, Esq., of Kinleith Papermills. A balance formerly in use by Dr. Joseph Black, and one of the pneumatic troughs in which he collected fixed air and other gases. One of the thermometers employed by the late Dr. Hope in determining the maximum density of water. One of the first voltaic piles constructed in this country, and several other pieces of scientific apparatus of historical, industrial interest have, through the co-operation of Dr. Lyon Playfair, been obtained by the director from the collections of the late Dr. Gregory. An aethrioscope, formerly in possession of Sir John Leslie, its inventor, has been presented by Mr. James Bryson. R. S. Culley, Esq., of the Electric Telegraph Company, has presented a piece of Cooke and Wheatstone's first working telegraph, and a length of the submarine cable between England and Holland, besides a porcelain telegraphic insulator fractured by a lightning stroke. J. J. Martin, surgeon, R.N., has added a piece of the shore end of the Atlantic telegraph cable, and a portion of the silk plummet-line used in sounding the Atlantic ocean. Mr. Thomas Allan has furnished examples of his newly-devised submarine cable, dispensing with metallic sheathing.

The director has purchased eleven models illustrating the metallurgical processes followed at Freiberg. They have been

constructed with great care, under the superintendence of Herr Schumann, modell-meister to the Freiberg Mining School. The Freiberg ores formerly noticed have reference to these models, and, for both, the Museum is largely indebted to the intervention of Dr. Robert Ferguson, of Edinburgh. A miner's steel flint-mill, the precurser of the Davy lamp, and a model telegraph indicator have been acquired by purchase. Models of the native mills and fishing-boats, including the actual hand-mills roughly chiselled out of lava, still in use in Iceland and the Faroë islands, have likewise been purchased. In association with these may be mentioned two ancient stone mills (querns) and some stone implements collected in Shetland by the Rev. A. Shand.

In the ceramic series, the Messrs. Wedgwood have again most liberally aided the Museum by contributing, at nominal cost, an important number of examples illustrating the imperfections of pottery, and the accidents to which ceramic processes are liable. Professor Traill has presented four pieces of Guiana pottery, of native manufacture. The Department of Science and Art have presented characteristic specimens of majolica and other rare wares.

In glass, several examples of old Scotch glass have been obtained from the laboratory relics of Dr. Black, and the apparatus inherited by Dr. Gregory from his predecessors in the Edinburgh chair of chemistry. Messrs. Maclaren and Anderson, of Edinburgh, have presented specimens of plate glass from the British Plate Glassworks, as well as a slab of Chance's Rowley Rag glass, manufactured from melted basalt.

In the department of chemical re-agents and special chemical products, the Museum is again indebted to the liberality of Price's Candle Company, who have bestowed upon it some very fine examples of their latest secondary manufactures. From Messrs. Wilson and Fletcher, chemical manufacturers, near London, a series of pigments prepared at their works has been purchased. The manufacture of soap has been illustrated very fully for the Museum by Mr. James Mellis, of the Prestonpan Soapworks, who has contributed examples of the constituent materials and collateral products, as well as illustrations of the different stages in the production of soap from vegetable and animal matters. Mr. McKean, of the St. Mirren's Works, Paisley, has also furnished some choice examples of the same manufacture.

In the organic department, including textiles, Mr. Farmer has presented specimens of New Zealand Kaouri gum and flax. Dr. A. Hunter, of Madras, has given various vegetable dyes, specimens of shell-lac, samples of silk and other important Indian products. Dr. J. Ivor Murray has added to his former contributions a large Chinese wood carving, a Chinese mandarin's dress, and an Egyptian gentleman's dress. Dr. Fayrer has presented a costly gold embroidered cashmere coverlet of unusually fine texture, received by him from the King of Oude. In association with these donations may be mentioned an Icelandic lady's dress, besides other specimens of textiles from Iceland, including a piece of ancient tapestry of considerable historical

Appendix F. — Industrial Museum, Scotland.

interest, all of which were procured at a moderate cost through the zealous good offices of Mr. R. M. Smith. A set of golf balls, illustrating an abandoned industrial application of feathers, which, before the introduction of gutta percha, were employed in stuffing them, has been presented by Mr. Peter Stevenson.

From Messrs. Thomas De la Rue and Co. a large set of illustrations of the paper manufacture and stationery have been obtained by gift and purchase. Among the applications of paper, examples of chromo-lithographic map-printing have been presented by Mr. Schenck, and illustrations of diaphanie have been obtained by purchase. Specimens of paper of Japanese manufacture, sent home by Sir J. Bowring, have, through the good offices of Dr Lyon Playfair, been secured to the Museum. Numerous examples of oil-cake have been presented by Messrs. J. & J. Cunningham and others.

In the department of animal products, Mr. James Vickers, of London, has unsolicitedly presented a beautiful suite of examples of isinglass. Mr. Cox, of Gorgie, has sent a corresponding series of home-made glues and gelatines; and the French glues and gelatines have been acquired by purchase from Paris. An admirable series of illustrations of the manufacture of leather, including the materials used in tanning, dyeing, and dressing it, have been freely presented by Messrs. E. & J. Richardson, of Newcastle. Messrs. Callender, of Leith, have shown similar liberality in furnishing illustrations of the different stages of tanning skins, including the tools used in leather dressing. Several articles of dress in fur, wool, and leather have been obtained, chiefly by gift from the Hudson's Bay territories, Iceland, the Faroë Islands, and Shetland. In concluding this statement it may be further mentioned that Mr. Galletly, the Museum assistant, made a short industrial tour through some of the more important manufacturing districts of England, in autumn, and concluded arrangements for procuring specimens in different departments of art, which are promised shortly.

II. The laboratory of the Museum has remained open throughout the entire year. Mr. Bloxam, the official chemical assistant, and two private assistants, Dr. M. Thomson and Mr. Irvine, as well as two apprentices, having carried on its duties under the Director.

In the course of the year Mr. Bloxam has completed the analysis of six varieties of glass in use in Scotland. The result of this inquiry will shortly be published. Dr. M. Thomson has analysed a number of the important mineral waters of Scotland, and will before long make the results public. At the request of different parties, nearly 200 analyses have been made. Among the substances examined have been guanos, superphosphates, and other manures; oil-cakes, soils, alloys, pigments, animal charcoal, metallic ores, sugar, wine, oil, glass, emery, candles, sheep-dipping mixtures, and the mineral and organic bodies connected with two cases of extensive animal poisoning.

The Director, in addition, has, at the request of parties interested, drawn up additional reports on the means of preventing

the photographic and anastatic forgery of bank notes; on the adulteration of bread; on the adulteration of tobacco; on the sophistication of pigments; on the purification of drainage water; on the delibility of ink; on the application of arsenical dipping mixtures to sheep; on the means of preserving building stones from decay; on the causes of failure in brewing; besides briefer answers to questions of more restricted interest.

Twelve pupils have prosecuted analytical chemistry in the laboratory for periods varying from one to six months. With one exception, they have been engaged in inquiries relating to industrial science.

III. The students of the University class of technology number, as they did last year, forty. The professions represented by the class are those of farmer, merchant, tanner, engineer, optician, teacher, doctor, lawyer, military and medical officer of Her Majesty's East India Service, besides young men classified simply as students, but in the majority of cases intending to follow industrial callings; as well as amateurs.

The Senate of the University of Edinburgh, in additional proof of their interest in the new chair, have, besides continuing the Straton medal, put at the Director's disposal, as Professor, thirty pounds, for the purchase of diagrams to illustrate his lectures. The class this year contains a large proportion of intelligent seniors, so that it has been possible to enter more fully into practical details than in some previous sessions. As in former years, the students have been liberal contributors to the Museum.

As the general public are not within the reach of the University lectures on Technology, the Director has availed himself of other occasions afforded him to commend the Industrial Museum to the community. In an address delivered by request to the Royal College of Physicians of Edinburgh, he had an indirect but important opportunity of bringing before the chief members of the Provincial Medical Association, who were present as guests of the College, the claims of industrial science. A corresponding opportunity was afforded him in the case of a large body of working men, and several other opportunities will shortly be taken advantage of.

IV. The Library continues on the same footing as last year, being rigidly limited to works on industrial science and art, requisite for the guidance of the Director and his assistants in prosecuting their respective duties.

The Director has, in conclusion, the pleasant duty of reporting the great satisfaction with which all classes in Scotland learned that a vote was taken in the House of Commons last session for the erection of the promised Museum buildings. The public look forward with undisguised eagerness to the commencement of building operations, and already besiege the Director with requests for admission to the industrial collections, which he can

Appendix F.

INDUSTRIAL MUSEUM, SCOTLAND.

but partially respond to, and only by a serious sacrifice of his own time and that of his assistants. He is further threatened with the loss of the laboratory, which he rents for the Industrial Museum as well as of the Associated Lecture Room. He would therefore earnestly represent the great importance of proceeding with the new buildings without any delay.

GEORGE WILSON, Director.

APPENDIX G.

Annual Report of the Regius Keeper of the Museum of Natural History, Edinburgh.

I have again much pleasure in being able to bear evidence to the unabated interest taken by the public in the Natural History Museum, and to the satisfactory mode in which the increased facility of admission continues to operate.

During the year 1858 the Museum has been visited by 88,831 persons, 2,756 of whom embrace such of the general public as applied on close days, and were admitted on a charge of sixpence each; while 85,526 were admitted without charge on Saturdays and public holidays, and 549 consist of students of natural history and general students of the University, together with professors and such visitors as may have been introduced by them. (*See* tabular details at the end of the report.)

The receipts derived from admission on close days, at a charge of sixpence, amount for the year to the sum of 68*l.* 18*s.*

I have further the pleasure of being able to make the same gratifying statement as in former reports regarding the almost uniformly good conduct which, notwithstanding the large concourse of visitors, prevailed during even the most crowded days. It is satisfactory to be able to say that in no case has the collection suffered any injury from the very much over-crowded state which the rooms frequently presented, and which, with the present limited accommodation, it is impossible to avoid.

Since my last report the collection has been considerably increased both by purchases and donations.

Among the purchases is one from Mr. Louis Sæman, of Paris, consisting of a collection of 875 species of fossils from the tertiaries of Bordeaux and Touraine, and from the trias of Stuttgart. This collection, which has been made with great care, contains some beautiful specimens, and constitutes a valuable and instructive addition to the palæontological department of the Museum.

From Dr. Greville has been purchased an extensive collection of British insects, containing many important desiderata and entire groups hitherto imperfectly represented in the Museum; all in a fine state of preservation, and bringing up the cabinet of British Entomology to a state of perfection which will doubtless be fully appreciated by the student to whom a well preserved and authentically named collection of species is indispensable.

The Palæontological collection has been further enriched by the purchase of illustrative series of fossils chiefly from the Crag and London clay; and the Zoological, by the purchase of a good collection of the skeletons and stuffed skins of fishes.

Appendix G.

NATURAL HISTORY MUSEUM, EDINBURGH.

The donations are numerous, and embrace some of much interest. Among the most important are some Mediterranean invertebrata, presented by Miss Orred, and including fine specimens of *Carinaria* and *Cymbulia* preserved in spirits; the whole constituting a valuable addition to the Gallery of Types, and supplying some of our most important desiderata.

From Professor Kinnahan, of Dublin, the Museum is indebted for a collection of Irish Crustacea, embracing twenty-seven species, all well preserved and authentically named. The care which Professor Kinnahan has bestowed upon this branch of zoology, and the success with which he has worked out the British species, gives a special value to this donation.

By Mr. J. B. Lawson, of the Cape of Good Hope, a collection of vertebrate fossils from that locality has been forwarded for presentation; Andrew Murray, Esq., has presented the skin of a reindeer from Hudson's Bay; a collection of the remains of oxen found under a peat bog at Balgone, at a depth of from 15 to 20 feet, has been presented by Sir Geo. Grant Suttie, Bart.; Mr. Martin Rigney, of Kirkaldy, has presented a portion of a pelvis, which proves to be that of a seal, found in a brickfield near Kirkaldy, at a depth of about 18 feet below the surface, and about 30 feet above the present level of high water; Dr. Andrew Balfour has also presented the remains of a seal found under circumstances nearly similar, in brick clay near Portobello; Mr. Wm. Caruthers has presented a collection of graptolites, from the Moffat district; Mr. John Davies has presented some products of the preparation of arsenious acid, remarkable for the great beauty of their crystals; and many other donors might be mentioned, to whose regard for their old University, or zeal in the cause of a great public institution, the Museum has been indebted during the past year.

But the most important donation received since my last report consists of specimens of *Nautilus pompilius*, with the animal transmitted in brine from the New Hebrides by the Rev. John Inglis to Dr. Greville, and liberally presented by the latter to the Museum. The specimens arrived on the whole in a fair state of preservation, and are among the few instances of the importation into Europe of the animal which inhabits the well-known shell of the Pearly Nautilus.

Besides the additions by purchase and donation, the Museum has been further enriched during the past year by the result of dredging carried on by myself chiefly upon the Western coast of Scotland and the South-western coast of Ireland.

With regard to the collection of typical forms, I am enabled to report that it is now so far advanced in the number of specimens exhibited, and in the completeness of its arrangement, as to afford valuable assistance to the student by presenting him with an example of the mode in which the principles of a philosophic classification admit of being applied, and by enabling him to obtain a comprehensive view of the general *plan* of the animal creation.

The arrangement and exposition of the characteristic fossils belonging to the different geological formations has also made considerable advance during the past year.

Some instructive models have been added to the Museum, and the library and collection of diagrams have been further increased.

In conclusion, I cannot avoid referring to the general feeling of satisfaction caused by the fact that the plans for the new building are now in a state of forwardness, and expressing a hope that increased accommodation may soon be afforded, without which I find it impossible to carrry out my plans of arrangement, and with which alone the collection can be rendered really efficient as a great instrument of public instruction.

GEO. J. ALLMAN, Regius Keeper.

TABULAR ABSTACT of the NUMBER of VISITORS to the MUSEUM OF NATURAL HISTORY, EDINBURGH, for the Year ending 31st December 1858.

—	Paying 6*d.* each.	Professors, &c. and others by them introduced.	Free.	Natural History Students of University.	Natural Science Students Free Church College.	With Special Ticket.	Matriculated Students.			Total for each Month.	Receipts.		
							University of Edinburgh.	Free Church College.	United Presbyterian College.		£	*s.*	*d.*
1858:													
January -	110	—	24,689	17	12	1	—	—	—	25,829	2	15	0
February -	84	15	2,301	18	16	4	—	—	—	2,438	2	2	0
March -	91	4	2,596	21	13	3	—	—	—	2,728	2	5	6
April -	138	5	1,894	13	1	1	—	—	—	2,052	3	9	0
May -	165	3	6,198	29	1	3	—	—	—	6,399	4	2	6
June -	263	60	3,983	61	1	6	—	—	—	4,374	6	11	6
July -	379	36	8,721	87	—	6	—	—	—	9,229	9	9	6
August -	613	12	9,267	—	—	1	—	—	—	9,893	15	6	6
September -	410	15	5,530	—	—	—	—	—	—	5,955	10	5	0
October -	216	20	5,686	—	—	—	—	—	—	5,922	5	8	0
November -	201	—	3,636	12	—	2	3	—	—	3,854	5	0	6
December -	86	7	11,025	20	—	14	6	—	—	11,158	2	3	0
Total -	2,756	177	85,526	278	44	41	9	—	—	88,831	£68	18	0

GEO. JAMES ALLMAN, Regius Keeper.

APPENDIX H.

Abstract of Returns from Provincial Schools of Art for the Year 1858.

ABERDEEN.—(Population in 1851—71,973.)

Established in 1854. It is held in Market Street.

The officers of the committee of management are:—

The Lord Provost, John D. Milne, Chairman.
James Sinclair, Secretary.
Peter Cleland, Head-Master, 1 certificate.
Henry Sylvester, Assistant-Master, 2 certificates.
James Sheppard, John Menzies, John Fraser, and Robert Ewen are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,198, showing a total increase of 491 since last year. This number includes 953 children of public schools, paying 60*l.*; 36 school-teachers and pupil-teachers, paying 12*l.* 9*s.* 3*d.*; and 209 students who have attended the Central School, paying 105*l.* 4*s.* 10*d.* The total fees have been 177*l.* 14*s.* 1*d.*, showing an increase of 53*l.* 7*s.* 9*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—16 students, who have paid 15*s.* per quarter; total 13*l.* 14*s.* 6*d.* Evening classes—226 students, who have paid 2*s.* and 2*s.* 6*d.* per month. The amount of these fees has been 91*l.* 10*s.* 4*d.*

3 students have qualified themselves for prize-studentships, and 1 student has been appointed an Art-pupil-teacher provisionally. Two students have been sent to the Training School.

The school received 3 Department prizes (10*l.*), with three national medallions; 11 local medals, 13 second grade rewards, and 72 first grade rewards have been obtained.

The school has expended from its own funds 2*l.* 14*s.* 8*d.* on account of examples, besides the local expenses for rent, cleaning firing, lighting, printing, &c.

The annual inspection and public examination took place in May 1858.

The amount of aid afforded to the school by the Department has been 123*l.* 7*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

ANDOVER DISTRICT.—(Population in 1851—17,266.)

Established in 1854. It is held in Bridge Street.

The officers of the committee of management are:—

The Hon. and Rev. S. Best, Chairman.
John Russell Fox, Esq., Secretary.
George Ryles, Head-Master, 2 certificates.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 554. This number includes

Appendix H. PROVINCIAL ART SCHOOLS.

489 children of public schools, paying 46*l.* 8*s.* 6*d.*; 12 persons taught in private schools, paying 19*l.* 16*s.* 6*d.*; 13 school-teachers and pupil-teachers, paying 5*l.* 10*s.*; and 40 students who have attended the Central School, paying 13*l.* 14*s.* 9*d.* The total fees have been 85*l.* 9*s.* 9*d.*

The attendance at the classes has been:—Day classes—16 students, who have paid 2*l.* 10*s.* and 1*l.* 5*s.* yearly; total, 20*l.* 19*s.* 5*d.* Evening classes—40 students, who have paid 1*s.* 9*d.* and 2*s.* per month. The amount of these fees has been 13*l.* 14*s.* 9*d.*

5 local medals, 8 second grade rewards, and 15 first grade rewards have been obtained.

The school has expended from its own funds 49*l.* 18*s.* 6½*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in December 1858.

The amount of aid afforded to the school by the Department has been 65*l.* 15*s.* 11½*d.*, which sum includes the payments for the master's certificates and other allowances, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

BASINGSTOKE.—(See ANDOVER.)

BATH.—(Population in 1851—54,240.)

Established in 1854. It is held in St. James Street.

The officers of the committee of management are:—

Rev. E. Tinling, Chairman.

Charles E. Davis, Secretary.

John Drummond, Head-Master, 1 certificate.

Arthur Francis and John Short are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 836, showing a total increase of 241 since last year. This number includes 599 children of public schools, paying 15*l.*; 101 persons taught in private schools, payir g 19*l.* 9*s.*; 12 school-teachers and pupil-teachers, paying 3*l.* 10*s.*; and 124 students who have attended the Central School, from whom 183*l.* 8*s.* 11*d.* have been received. The total amount of fees has been 221*l.* 7*s.* 11*d.*, showing an increase of 40*l.* 17*s.* 7*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—76 students, who have paid from 10*s.* 6*d.* to 1*l.* 1*s.* per quarter. Evening classes—58 students, who have paid 2*s.* per month and 2*s.* entrance fee. The amount of these fees has been 37*l.* 16*s.* 9*d.*

3 students were qualified for prize-studentships, 3 three of them having been appointed Art pupil-teachers provisionally.

The school received 2 Department prizes (10*l.*), with 2 national medallions; 16 local medals, 37 second grade rewards, and 11 first grade rewards have been obtained.

The annual inspection and public examination took place in April 1858.

The amount of aid afforded to the school by the Department has been 120*l.* 6*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

BIRKENHEAD.—(Population in 1851—24,285.)

Established in 1855. It is held in Brook Street.

The officers of the committee of management are :—

W. Balleny, Chairman.
W. H. Sloman, Secretary.
W. Foster, 2 certificates, Head-Master.
Hannah Thorneley is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 493, showing a total increase of 33 since last year. This number includes 332 children of public schools, paying 17*l.* 10*s.*; 67 persons taught in private schools, paying 82*l.* 18*s.*; 15 school-teachers and pupil-teachers, and 79 students who have attended the Central School, from whom 48*l.* 13*s.* 2*d.* have been received. The total amount of fees has been 149*l.* 1*s.* 2*d.*, showing an increase of 61*l.* 11*s.* 8*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—28 students who have paid 6*s.* per month; total, 23*l.* 16*s.* 9*d.* Evening classes—66 students who have paid from 2*s.* to 4*s.* per month; total, 24*l.* 16*s.* 5*d.*

The school received 1 Department prize (10*l.*), with 1 national medallion, 5 local medals, 8 second grade rewards, and 13 first grade rewards have been obtained. The school has expended from its own funds 3*s.* 2*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in December.

The amount of aid afforded to the school by the Department has been 64*l.* 19*s.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

BIRMINGHAM.—(Population in 1851—234,841.)

Established in 1842. It is held in Paradise Street, and has elementary branches at Smethwick and Spon Lane.

The officers of the committee of management are :—

Hon. and Rev. G. M. Yorke, Chairman.
Edwin Laundy, Secretary.
David Raimbach, Head-Master.
Assistant-Masters, W. Wallis; H. Sounes, 4 certificates; C. Sturtevant, 2 certificates.
Frank G. Jackson is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,983, showing a total increase of 447 since last year. This number includes 1,163 children of public schools, paying 120*l.*; 54 school-teachers and pupil-teachers, paying 18*l.* 14*s.*; and 766 students who have attended the Central School, from whom 549*l.* 5*s.* have been received. The total amount of fees has been 687*l.* 19*s.*, being 26*l.* 11*s.* less than the sum received last year.

The attendance at the classes has been :—Day classes—217 students who have paid—males 15*s.*, females 10*s.*, per session total 93*l.* 18*s.* 6*d.* Evening classes—603 students who have paid from 5*s.* to 10*s.* per session. The amount of these fees has been 474*l.* 0*s.* 6*d.*

No students have qualified themselves for prize-studentships, one of them having been appointed an Art pupil-teacher provisionally. One student has been sent to the Training School at South Kensington.

Appendix H.

PROVINCIAL ART SCHOOLS.

The school received 5 Department prizes (10*l.*), with 5 national medallions (7 awards); 21 local medals, 13 second grade rewards, and 96 first grade rewards have been obtained. The school has expended from its own funds 6*l.* 16*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in January.

An exhibition of the students' works was held in the same month.

The amount of aid afforded to the school by the Department has been 438*l.* 0*s.* 9*d.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

BOLTON.—(Population in 1851—61,171.)

Established in 1857. It is held at the Church Institution, Silverwell Street.

The officers of the committee of management are:—

Rev. H. Powell, Chairman.
Rev. Charles Turner, Secretary.
J. W. Walker, Head-Master, 2 certificates.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,214, showing a total increase of 948 since last year. This number includes 997 children of public schools, paying 20*l.* 0*s.* 6*d.*; 103 school-teachers and pupil-teachers, paying 30*l.* 17*s.*; and 114 students who have attended the Central School, paying 125*l.* 14*s.* 6*d.* The total amount of fees has been 176*l.* 12*s.*, showing an increase of 44*l.* over the sum received last year.

The attendance at the classes has been:—Day classes—37 students who, have paid 21*s.* per month; total, 64*l.* 0*s.* 6*d.* Evening classes—81 students, who have paid 8*s.* and 10*s.* per session; total, 92*l.* 11*s.*

One student has qualified himself for a prize-studentship.

The school received 1 Department prize (10*l.*), with 1 national medallion; 11 local medals, 40 second grade rewards, and 39 first grade rewards, have been obtained. The school has expended from its own funds 10*l.* 5*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in December

An exhibition of the students' works was held in December, and was attended by 2,642 persons.

The amount of aid afforded to the school by the Department has been 97*l.* 19*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

BRIDGNORTH.—(Population in 1851—6,172.)

Established in 1858. It is held in the New Market Buildings.

The officers of the committee of management are:—

Rev. W. R. Marshall, Chairman.
Rev. D. D. Evans, Secretary.
James A. Mulligan, 1 certificate, Head-Master.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 55, showing a total increase of 13 since last year. This number includes 4 school-teachers and pupil-teachers, and 51 students who have attended the Central School. The total amount of fees has been 60*l.* 1*s.*

The attendance at theclasses has been :—Day classes—26 students who have paid from 12*s.* 6*d.* to 15*s.* per quarter, and an entrance fee of 5*s.*; total, 49*l.* 6*s.* Evening classes—29 students, who have paid from 3*s.* to 4*s.* per quarter, and 2*s.* 6*d.* entrance fee; total, 10*l.* 15*s.*

In the school 1 local medal, 3 second grade rewards, and 14 first grade rewards, have been obtained. The school has expended from its own funds 40*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in November.

The amount of aid afforded to the school by the Department is included in the return from Coalbrookdale.

BRIGHTON.—(Established in 1858, but not yet examined.)

BRISTOL.—(Population in 1851—137,328.)

Established in 1853. It is held in the Academy of Arts, Queen's Road

The officers of the committee of management are :—

P. W. S. Miles, Chairman.
Rev. J. Heyworth and J. B. Harford, Secretaries.
R. E. Ferrier, 1 certificate, Head-Master.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 2,813, showing a total increase of 389 since last year. This number includes 2,226 children of public schools, paying 45*l.*; 270 persons taught in private schools, paying 70*l.*; 59 school-teachers and pupil-teachers, paying 13*l.* 16*s.*; and 258 students who have attended the Central School, from whom 138*l.* 9*s.* have been received. The total amount of fees has been 267*l.* 5*s.*, showing an increase of 25*l.* 7*s.* over the sum received last year.

The attendance at the classes has been :—Day classes—130 students, who have paid from 4*s.* to 7*s.* per month, and an entrance fee of from 2*s.* to 3*s.* 6*d.*; total, 80*l.* 14*s.* Evening classes—128 students, who have paid 2*s.* per month, and 1*s.* entrance fee; total, 57*l.* 15*s.*

In the school 18 local medals, 38 second grade rewards, and 102 first grade rewards have been obtained.

The annual inspection and public examination took place in April.

The amount of aid afforded to the school by the Department has been 64*l.* 1*s.*, which sum includes the payments for the master's certificate and other allowances, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

BURNLEY.—(Population in 1851—20,828.)

Established in 1858. It is held in Market Street, Manchester Road.

The officers of the committee of management are :—

Sir J. Kay Shuttleworth, Bart., Chairman.
Archibald Gunn, 3 certificates, Head-Master.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 818. This number includes 661 children of public schools, paying 35*l.* 6*s.*; 107 school-teachers and pupil-teachers paying 15*l.* 18*s.*, and 50 students who have attended the Central School, paying 68*l.* 7*s.* The total fees have been 119*l.* 11*s.*

The attendance at the classes has been :—Day classes—22 students who have paid 7*s.* 6*d.* per quarter; total, 27*l.* 17*s.* 6*d.* Evening classes—28 students, who have paid from 1*s.* 6*d.* to 2*s.* 6*d.* per quarter, and 2*s.* entrance fee. The amount of these fees has been 6*l.* 7*s.*

The school has expended from its own funds 15*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting printing, &c.

No inspection of the school has yet taken place.

The amount of aid afforded to the school by the Department has been 30*l.*

BURSLEM.—(School closed.)

CAMBRIDGE.—(Established in 1858, but not yet examined.)

CARLISLE.—(Population in 1851—26,310.)

Established in 1854. It is held in Tinkle Street.

The officers of the committee of management are :—
The Mayor, Chairman.
Daniel McAlpin, Esq., Secretary.
Herbert Lees, 3 certificates, Head-Master.
Joseph Pickering is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 676. This number includes 450 children of public schools, paying 10*l.*; 90 persons taught in private schools, paying 40*l.*; 26 school-teachers and pupil-teachers, paying 6*l.* 2*s.*; and 110 students who have attended the Central School, from whom 51*l.* 13*s.* have been received. The total amount of fees has been 107*l.* 15*s.*

The attendance at the classes has been :—Day classes—20 students who have paid 4*s.* per month ; total 16*l.* 18*s.* Evening classes—90 students, who have paid 2*s.* per month ; total, 57*l.* 15*s.*

The school received 12 local medals; 13 second grade rewards and 19 first grade rewards have been obtained. The school has expended from its own funds 8*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June.

An exhibition of the students' works was held in June, and was attended by 700 persons.

The amount of aid afforded to the school by the Department has been 113*l.* 6*s.* 8*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

CARMARTHEN AND LLANELLY.—(Population in 1851—10,524.)

Established in 1854. It is held in Carmarthen, and has an elementary branch at Llanelly.

The officers of the committee of management are :—
W. Norris, Carmarthen ; C. Nevill, Llanelly ; Chairmen.
John Thomas, Carmarthen ; Messrs. H. Bevan and J. Buckley, Llanelly ; Secretaries.
F. F. Hosford, 2 certificates, Head-Master.
David Jones and William Jones are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,375, showing a total increase of 1,178, since last year. This number includes 1,190 children of public schools, paying 20*l.*; 38 persons taught in private schools, paying 20*l.*; 32 school-teachers and pupil-teachers, paying 8*l.* 2*s.* 5½*d.*; and 115 students who have attended the Central School, from whom 60*l.* 3*s.* have been received. The total amount of fees has been 108*l.* 5*s.* 5½*d.*, showing an increase of 45*l.* 7*s.* 3½*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—25 students who have paid from 4*s.* to 5*s.* per month; total, 23*l.* 6*s.* Evening classes—125 students, who have paid from 1*s.* to 3*s.* per month; total, 37*l.* 17*s.*

Three students have qualified themselves for prize-studentships, two of them having been appointed Art pupil-teachers provisionally.

In the school 7 local medals, 28 second grade rewards, and 25 first grade rewards have been obtained.

The annual inspection and public examination took place in October.

An exhibition of the students' works was held in Carmarthen, and was attended by 175 persons.

The amount of aid afforded to the school by the Department has been 74*l.* 5*s.* 3*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

CARNARVON.—(Population in 1851—8,674.)

Established in 1853. It is held in Llanberis Road.

The officers of the committee of management are :—

Rev. T. Thomas, Chairman.
H. P. Manley, Esq., Secretary.
J. C. Rowland, 1 certificate, Head-Master.
Richard D. Thomas is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 765, showing a total increase of 26, since last year. This number includes 687 children of public schools, paying 60*l.*; 18 school-teachers and pupil-teachers, paying 1*l.* 7*s.* 6*d.*; and 60 students who have attended the Central School, paying 84*l.* 13*s.* 2*d.* The total amount of fees has been 146*l.* 0*s.* 8*d.*, showing an increase of 36*l.* 19*s.* 10*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—10 students who have paid 1*l.* 1*s.* per quarter; total, 42*l.* Evening classes—56 students, who have paid from 6*s.* to 10*s.* per quarter; total, 42*l.* 13*s.* 2*d.*

One student has qualified himself for a prize-studentship, and one has been appointed an Art pupil-teacher provisionally.

The school received one Department prize (10*l.*), with one national medallion; 9 local medals, 24 second grade rewards, and 21 first grade rewards have been obtained. The school has expended from its own funds 9*l.* 2*s.* 1*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June.

An exhibition of the students' works was held in June, and was attended by 600 persons.

The amount of aid afforded to the school by the Department has been 67*l.* 19*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

CHELTENHAM.—(Population in 1851—35,051.)

Established in 1853. It is held at 45, Winchcomb Street.

The officers of the committee of management are :—

Rev. H. W. Bellairs, Chairman.
R. Beamish, Esq., F.R.S., Secretary.
James P. Knight, 1 certificate, Head-Master.
Julia H. May and Robert T. Waite are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,417, showing a total in-

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crease of 270 since last year. This number includes 1,195 children and other students of public schools, paying 145*l.*; 20 persons taught in private schools, paying 10*l.*; 65 school-teachers and pupil-teachers, paying 14*l.*; and 137 other students who have attended the Central School, paying 108*l.* 15*s.* The total amount of fees has been 277*l.* 15*s.*, showing a decrease of 14*l.* 16*s.* from the sum received last year.

The attendance at the classes has been:—Day classes—86 students, who have paid from 10*s.* to 15*s.* per quarter; total, 71*l.* 10*s.* Evening classes 85 students, who have paid 5*s.* per quarter; total, 33*l.* 16*s.* 6*d.*

Eight students have qualified themselves for prize-studentships, and 2 of them have been appointed Art pupil-teachers.

The school received 1 Department prize (10*l.*), with 1 national medallion; 10 local medals, 47 second grade rewards, and 38 first grade rewards have been obtained. The school has expended from its own funds 8*l.* 6*s.* 10*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in April.

An exhibition of the students' works was held in April 1858.

The amount of aid afforded to the school by the Department has been 157*l.* 15*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

CHESTER.—(Population in 1851—27,766.)

Established in 1853. It is held in the Lecture Hall, Lower Bridge Street, and has branches at Wrexham and Crewe.

The officers of the committee of management are:—

W. Wardell, Esq., Chairman.
Rev. A. Rigg, Secretary.
Ellis A. Davidson, 1 certificate, Head-Master.
Thomas Griffith and Samuel Fildes are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,891, showing a total increase of 487 since last year. This number includes 1,679 children of public schools, paying 96*l.* 5*s.*; 33 persons taught in private schools, paying 30*l.*; 23 school-teachers and pupil-teachers, paying 3*l.* 3*s.*; and 156 students who have attended the Central School, from whom 67*l.* 9*s.* have been received. The total amount of fees has been 196*l.* 17*s.*, being 17*l.* 18*s.* less than the sum received last year.

The attendance at the classes has been:—Day classes—23 students who have from 10*s.* to 12*s.* per quarter; total 28*l.* 10*s.* Evening classes—63 students who have paid 2*s.* per month, and 1*s.* entrance fee. The amount of these fees has been 42*l.* 2*s.*

Four students were qualified for prize-studentships, 2 of them having been appointed art pupil-teachers provisionally.

In the school 8 local medals, 46 second grade rewards, and 51 first grade rewards have been obtained. The school has expended from its own funds 5*l.* 7*s.* 10*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in November.

The amount of aid afforded to the school by the Department has been 134*l.* 6*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

CLONMEL.—(Population in 1851—17,724.)

Established in 1854. It is held in the Mechanics' Institute, Anglesea Street.

The officers of the committee of management are:—
Alderman J. Hackett, Chairman.
P. J. Purcell, Secretary.
James Healy, 1 certificate; Head-Master.
Robert Hewitt is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 218, showing a decrease of 37 since last year. This number includes 150 children of public schools, paying 50*l.*; 20 school-teachers and pupil-teachers; and 48 students who have attended the Central School, from whom 39*l.* 15*s.* have been received. The total amount of fees has been 89*l.* 15*s.*, showing a decrease of 17*l.* 9*s.* 2*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—12 students, who have paid 6*s.* per month, and an entrance fee of 4*s.*; total, 16*l.* 5*s.* Evening classes—36 students, who have paid 2*s.* per month. The amount of these fees has been 23*l.* 10*s.*

One student has qualified himself for prize-studentship, having been previously appointed Art pupil-teacher provisionally.

In the school, 3 local medals, 9 second grade rewards, and 22 first grade rewards have been obtained. The school has expended from its own funds 3*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in October.

The amount of aid afforded to the school by the Department has been 66*l.* 4*s.*; which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

COALBROOKDALE.—(Population in 1851—8,000.)

This school of art was established in 1856.

The officers of the committee of management are:—
C. Crookes, Esq., Chairman.
William G. Norris, Secretary.
James A. Mulligan, 2 certificates, Head-Master.
John W. Fall is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 356, showing a total decrease of 120 since last year. This number includes 260 children of public schools, paying 30*l.*; 20 school-teachers and pupil-teachers, and 76 students who have attended the Central School, from whom 98*l.* 10*s.* have been received. The total amount of fees has been 128*l.* 10*s.*, being 49*l.* 4*s.* 2*d.* less than the sum received last year.

The attendance at the classes has been:—Day classes—20 students, who have paid from 12*s.* 6*d.* to 15*s.* per quarter; total, 48*l.* 2*s.* 6*d.* Evening classes—76 students, who have paid from 3*s.* to 6*s.* per quarter. The amount of these fees has been 50*l.* 7*s.* 6*d.*

Four students were qualified for prize-studentships.

The school received 1 Department prize (10*l.*), with 1 national medallion; 22 local medals, 43 second grade rewards, and 43 first grade rewards have been obtained. The school has expended from its own funds 2*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in November.

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The amount of aid afforded to the school by the Department has been 107*l.* 5*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

CORK.—(Population in 1851—86,485.)

Established in 1850. It is held in Nelson Place.

The officers of the committee of management are:—
D. Donegan, Esq., Chairman.
Thomas S. Dunscombe, Esq., Secretary.
Edward Sheil, 2 certificates, Head-Master.
Henry O'Shea, John Morrogh, and Alice Wright are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 818, showing a total increase of 190 since last year. This number includes 558 children of public schools, and 260 students who have attended the Central School, from whom 131*l.* 16*s.* 9*d.* have been received. The total fees have been 182*l.* 13*s.* 10*d.*, being 23*l.* 16*s.* 8*d.* less than the sum received last year.

The attendance at the classes has been:—Day classes—137 students, who have paid from 10*s.* to 15*s.* per month; total, 94*l.* 6*s.* 9*d.* Evening classes—208 students, who have paid 5*s.* per quarter; total, 37*l.* 10*s.*

Two students have qualified themselves for prize studentships, and two students have been appointed Art pupil-teachers provisionally.

The school received 1 Department prize (10*l.*), with 1 national medallion; 14 local medals, 27 second grade rewards, and 16 first grade rewards have been obtained. The school has expended from its own funds 10*l.* 7*s.* 7*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in October.

An exhibition of the students' works was held in the Athenæum, and was attended by 5,000 persons. It was open free to the public.

The amount of aid afforded to the school by the Department has been 147*l.* 4*s.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

COVENTRY.—(Population in 1851—36,812.)

Established in 1844. It is held at No. 4, St. John's Bridge.

The officers of the committee of management are:—
Lord Leigh, Chairman.
R. Caldicott, Secretary.
Henry Rafter, 2 certificates, Head-Master.
William Hough, Assistant-Master.
Thomas Mallinson is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1851 has been 620; showing a total increase of 56 since last year. This number includes 487 children of public schools, paying 71*l.* 14*s.*; 14 school-teachers and pupil-teachers, paying 2*l.* 15*s.*; and 119 students, who have attended the Central School, from whom 66*l.* 11*s.* 6*d.* have been received. The total amount of fees has been 141. 0*s.* 6*d.*, being 16*s.* 3*d.* less than the sum received last year.

The attendance at the classes has been:—Day classes—48 students, who have paid 1*l.*, 10*s.*, and 5*s.* per session; total, 23*l.* 15*s.* Evening classes—98 students, who have paid from 5*s.* to 10*s.* per session. The amount of these fees has been 45*l.* 11*s.* 6*d.*

Two students were qualified for prize-studentships, one of them having been appointed an Art pupil-teacher provisionally.

The school received 2 Department prizes (10*l.*), with 2 national medallions; 3 awards, 14 local medals, 17 second grade rewards, and 25 first grade rewards have been obtained. The school has defrayed with its own funds the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in September.

An exhibition of the students' works was held in September.

The amount of aid afforded to the school by the Department has been 99*l.* 0*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

DARLINGTON.—(Population in 1851—11,228.)

Established in 1857. It is held in Union Street.

The officers of the committee of management are:—

H. Pease, Esq., M.P., Chairman.
J. P. Pritchett, Secretary.
Samuel Elton, 2 certificates, Head-Master.
William Woof is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,011. This number includes 860 children of public schools, paying 35*l.*; 30 persons taught in private schools, paying 50*l.*; 47 school-teachers and pupil-teachers, paying 8*l.* 15*s.*; and 74 students, who have attended the Central School, paying 99*l.* 4*s.* The total amount of fees has been 192*l.* 19*s.*

The attendance at the classes has been:—Day classes—18 students who have paid 8*s.* per month, or 30*s.* per session; total, 40*l.* 4*s.* Evening classes—86 students, who have paid 2*s.* per month, or 7*s.* 6*d.* per session, and 2*s.* entrance fee; the amount of these fees has been 59*l.*

The school has expended from its own funds 19*l.* 15*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

No inspection or public examination has yet taken place.

The amount of aid afforded to the school by the Department has been 32*l.* 8*s.* 6*d.*; which sum includes the payments for the master's certificates and other allowances, and the payments to Art pupil-teacher.

DEVONPORT.—(Established in 1858, but not yet examined.)

DUBLIN.—(Population in 1851—258,361.)

Established in 1849. It is held at the Royal Dublin Society.

The officers of the committee of management are:—

Edward Seymour, Chairman.
Dr. Steele, Secretary.
Henry Macmanus, 1 certificate, Head-Master.
Thomas Holmes, 2 certificates, Assistant-Master.
Edmund Byrne is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 600, showing a total increase of 196 since last year. This number includes 160 children of public schools, paying 5*l.*; and 440 students who have attended the Central

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School, from whom 318*l.* 17*s.* 3*d.* has been received. The total amount of fees has been 323*l.* 17*s.* 3*d.*, showing an increase of 42*l.* 15*s.* 6*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—400 students, who have paid 3*s.* per month, and an entrance fee of 2*s.* 6*d.*; total, 275*l.* 11*s.* 6*d.* Evening classes,—students, who have paid 1*s.* 6*d.* per month, and 1*s.* entrance fee. The amount of these fees has been 43*l.* 5*s.* 9*d.*

Eight students have qualified themselves for prize-studentships, one of them having been appointed an Art pupil-teacher. One student has been sent to the Training School at South Kensington.

The school received one Department prize (10*l.*), with one national medallion; 19 local medals and 58 second grade rewards have been obtained. The school has expended from its own funds 9*l.* 7*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in October.

An exhibition of the students' works was held in the gallery of the Royal Dublin Society School, and was attended by 300 persons.

The amount of aid afforded to the school by the Department has been 210*l.* 4*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

DUDLEY.—(Population in 1851—37,962.)

Established in 1853. It is held in St. Thomas' National Girls' School.

The officers of the committee of management are :—

The Rev. T. C. Browne, Chairman.
F. Fish, Esq., Secretary.
Robert Cochrane, 2 certificates, Head-Master.
Thomas Smart and Thomas Hickling are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 961, showing a total increase of 152 since last year. This number includes 856 children of public schools, paying 65*l.*; 47 school-teachers and pupil-teachers, paying 11*l.* 5*s.*; and 58 students who have attended the Central School, from whom 21*l.* 0*s.* 6*d.* have been received. The total amount of fees has been 97*l.* 5*s.* 6*d.*, being 8*l.* 17*s.* less than the sum received last year.

The attendance at the classes has been :—Day classes—10 students, who have paid from 10*s.* 6*d.* to 1*l.* 1*s.* per quarter; total, 15*l.* 1*s.* 6*d.* Evening classes—46 male students, who have paid 2*s.* per month, or 5*s.* 6*d.* per quarter; total, 32*l.* 5*s.* 6*d.*

Two students have qualified themselves for prize-studentships, and two students have been appointed Art pupil-teachers provisionally.

The school received one Department prize (10*l.*), with one national medallion; 4 second grade rewards, and 50 first grade rewards have been obtained.

The annual inspection and public examination of the Public Schools took place in November; the Central School was not examined.

The amount of aid afforded to the school by the Department has been 83*l.* 14*s.* 4*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to art pupil-teachers; also the money awards on account of the children who obtained rewards, the cost of medallions, &c.

DUNDEE.—(Population in 1851—78,931.)

Established in 1856. It is held at the Public Seminaries, Euclid Crescent.

The officers of the committee of management are:—
John Hurrock, Chairman.
George Milne, Secretary.
John Kennedy, 3 certificates, Head-Master.
John Smith, Rea Stevenson, and James Dundas are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,430, showing a total increase of 658 since last year. This number includes 910 children of public schools, paying 44*l.*; 172 school-teachers and pupil-teachers, paying 35*l.* 10*s.*; and 348 students who have attended the Central School, paying 203*l.* 16*s.* 10*d.* The total amount of fees has been 283*l.* 6*s.* 10*d.*, showing an increase of 16*l.* 17*s.* 4*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—234 students, who have paid 10*s.* 10*d.* and 12*s.* 10*d.* per quarter; total, 166*l.* 2*s.* 10*d.* Evening classes—214 students, who have paid 2*s.* per month or 6*s.* per quarter. The amount of these fees has been 73*l.* 4*s.*

Five students have qualified themselves for prize-studentships, and three of them have been appointed Art pupil-teachers. Two students have been sent to the Training School at South Kensington.

The school received 1 Department prize (10*l.*), with 1 national medallion (2 awards); 14 local medals, 65 second grade rewards, and 80 first grade rewards have been obtained. The school has expended from its own funds 6*l.* 7*s.* 5*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in May.

An exhibition of the students' works was held in July, and was attended by 3,720 persons.

The amount of aid afforded to the school by the Department has been 175*l.* 2*s.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

DURHAM.—(Population in 1851—13,188.)

Established in 1853. It is held in Saddler Street.

The officers of the committee of management are:—
J. Bramwell, Chairman.
H. Smales, jun., Secretary.
G. Newton, 3 certificates, Head-Master.
Micah Chambers and George Sewell are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 377. This number includes 260 children of public schools, paying 5*l.*; 16 school-teachers and pupil-teachers, paying 5*l.* 7*s.* 6*d.*; and 101 students, who have attended the Central School, paying 124*l.* 14*s.* The total amount of fees has been 135*l.* 7*s.*6*d*, showing an increase of 31*l.* 13*s.* over the sum received last year.

The attendance at the classes has been:—Day classes—34 female students who have paid 5*s.* per month, from 10*s.* 6*d.* to 1*l.* 1*s.* per quarter, and an entrance fee of 1*s.*; total, 86*l.* 15*s.* 6*d.* Evening classes—83 male students, who have paid 2*s.* per month, and 2*s.* entrance fee. The amount of these fees has been 43*l.* 16*s.*

Three students have qualified themselves for prize-studentships.

In the school 7 local medals, 26 second grade rewards, and 14 first grade rewards have been obtained. The school has expended from

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its own funds 11*l.* 3*s.* 2½*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in May.

An exhibition of the students' works was attended by 411 persons.

The amount of aid afforded to the school by the Department has been 92*l.* 2*s.* 6*d.*; which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

EDINBURGH.—(Established in 1858, but not yet examined. *See* Appendix L.)

EXETER.—(Population in 1851—32,823.)

Established in 1854. It is held in High Street.

The officers of the committee of management are:—

Sir S. H. Northcote, Bart., Chairman,
C. Wescomb and W. Miles, Secretaries.
Montague Wigzell, 1 certificate, Head-Master.
Charles Hart and William F. Cross are the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,163, showing a total increase of 332 since last year. This number includes 803 children of public schools, paying 40*l.*; 62 persons taught in private schools, paying 9*l.* 5*s.*; 36 school-teachers and pupil-teachers, paying 11*l.* 5*s.*; and 262 students, who have attended the Central School, from whom 233*l.* 2*s.* 6*d.* has been received. The total amount of fees has been 293*l.* 12*s.* 6*d.*, showing an increase of 21*l.* 10*s.* over the sum received last year.

The attendance at the classes has been:—Day classes—74 students, who have paid 1*l.* 1*s.* per quarter, and an entrance fee of 5*s.*; total, 147*l.* 15*s.* 6*d.* Evening classes—169 students, who have paid 2*s.* and 1*s.* per month, and 2*s.* entrance fee. The amount of these fees has been 85*l.* 7*s.*

Six students have qualified themselves for prize-studentships, two of them having been appointed Art pupil-teachers.

The school received one Department prize (10*l.*), with one national medallion; 12 local medals, 32 second grade rewards, and 63 first grade rewards have bren obtained. The school has expended from its own funds 13*l.* 9*s.* 2*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in May 1858.

One exhibition of the students' works was held in May, and was attended by 3,367 persons.

The amount of aid afforded to the school by the Department has been 137*l.* 4*s.* 2*d.*; which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

GLASGOW.—(Population in 1851—329,097.)

Established in 1845. It is held at 16, Ingram Street.

The officers of the committee of management are:—

James Hannan, Chairman.
James A. Campbell, Secretary.
Charles H. Wilson, 1 certificate, Head-Master.
Edwin Lyne, 2 certificates, James Howden, David Thomson, Robert Greenlees, Assistant-Masters.
Elizabeth Patrick, Mistress.
Margaret Kelly and Andrew Boag are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,799, showing a total increase

of 578 since last year. This number includes 960 children of public schools, paying 153*l.*; 105 school-teachers and pupil-teachers, paying 25*l.* 6*s.*, and 734 students who have attended the Central School, from whom 465*l.* 9*s.* have been received. The total fees have been 643*l.* 15*s.*, showing an increase of 39*l.* 8*s.* 9*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—342 students, who have paid from 3*s.* to 7*s.* per month, and an entrance fee of from 1*s.* to 2*s.*; total, 200*l.* 8*s.* Evening classes—392 students, who have paid from 1*s.* to 3*s.* per month, and 1*s.* entrance fee. The amount of these fees has been 287*l.* 7*s.*

The school received 3 Department prizes (10*l.*), with 3 national medallions; 20 local medals, 50 second grade rewards, and 24 first grade rewards have been obtained. The school has expended from its own funds 10*l.* on account of examples, besides the local expenses for rent, cleaning firing, lighting, printing, &c.

The annual inspection and public examination took place in June 1858.

An exhibition of the students' works was held in June.

The amount of aid afforded to the school by the department has been 549*l.* 2*s.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

GREENOCK.—(Population in 1851—36,689.)

Established in 1857. It is held in the Old Town Hall, Hamilton Street.

The officers of the committee of management are:—
J. O. Hunter, Chairman.
Alexander M'Kenzie, Secretary.
Daniel Urie, 2 certificates, Head-Master.
Walter Yuill is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 637, showing a total increase of 467 since last year. This number includes 462 children of public schools, paying 151*l.* 15*s.*; 13 school-teachers and pupil-teachers, paying 7*l.* 10*s.*; and 162 students who have attended the Central School, from whom 69*l.* 0*s.* have been received. The total fees have been 228*l.* 5*s.*, showing an increase of 148*l.* 5*s.* over the sum received last year.

The attendance at the evening classes—169 male and 6 female students, who have paid from 4*s.* 6*d.* to 6*s.* 6*d.* per quarter, and from 12*s.* 6*d.* to 18*s.* per quarter. The amount of these fees has been .

One student has qualified himself for a prize-studentship, and one has been appointed an Art pupil-teacher provisionally.

In the school 6 local medals, 20 second grade rewards, and 12 first grade rewards have been obtained. The school has expended from its own funds 4*l.* 4*s.* 5*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June 1858.

The amount of aid afforded to the school by the Department has been 62*l.* 2*s.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

GUILDFORD.—(Established in 1858, but not yet examined.)

HANLEY.—(Population in 1851—12,468.)

Established in 1847. It is held in Pall Mall.

The officers of the committee of management are:—
Francis Wedgwood, Chairman.
Edwin Powell, Secretary.
Charles Hodder, 2 certificates, Head-Master.
Thomas Hampton, W. Boon, and Reuben Lees are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 665, showing a total increase of 406 since last year. This number includes 505 children of public schools, paying 20*l.*; 11 school-teachers and pupil-teachers, and 149 students who have attended the Central School, from whom 82*l.* 17*s.* 6*d.* have been received. The total amount of fees has been 102*l.* 17*s.* 6*d.* showing an increase of 43*l.* 11*s.* 6*d.* over the sum received last year.

The attendance at classes has been:—Day classes—27 students, who have paid 1*s.* 6*d.* per month. Evening classes—133 students, who have paid from 1*s.* 6*d.* to 2*s.* per month. Total fees, 82*l.* 17*s.* 6*d.*

The school received 5 Department prizes (10*l.*), with 5 national medallions (8 awards); 21 local medals, 25 second grade rewards, and 24 first grade rewards have been obtained. The school has expended from its own funds 1*l.* 15*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in February.

An exhibition of the students' works has been held.

The amount of aid afforded to the school by the Department has been 130*l.* 19*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

HEREFORD.—(Population in 1851—12,108.)

Established in 1853. It is held in the Scudamore National Schools, and has a branch at Ludlow.

The officers of the committee of management are:—
The Very Rev. the Dean of Hereford, Chairman.
J. T. Fowler, Esq., Secretary.
Richard B. Bustin, 1 certificate, Head-Master.
Edward W. Pritchard and Robert Keay are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 545, showing a total increase of 225 since last year. This number includes 460 children of public schools, paying 60*l.*; 11 school-teachers and pupil-teachers, paying 2*l.* 2*s.* 6*d.*; and 74 students who have attended the Central School, paying 17*l.* The total amount of fees has been 79*l.* 2*s.* 6*d.*, showing an increase of 23*l.* 2*s.* 6*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—14 students who have paid from 10*s.* to 12*s.* 6*d.* per quarter; total 9*l.* 17*s.* 6*d.* Evening classes—30 students who have paid from 1*s.* to 2*s.* per month. The amount of these fees has been 9*l.* 5*s.*

Two students have qualified themselves for prize-studentships, and have been appointed Art pupil-teachers.

In the school 2 local medals, 26 second grade rewards, and 71 first grade rewards have been obtained.

The annual inspection and public examination took place in October.

The amount of aid afforded to the school by the Department has been

112*l.* 7*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

IPSWICH.—(Established in 1858, but not yet examined.)

LANCASTER.—(Population in 1851.—16,168.)

Established in 1856. It is held at Castle Hill.

The officers of the committee of management are:—
The Mayor of Lancaster, Chairman.
William Whelon, Esq., Secretary.
Herbert Gilbert, 2 certificates, Head-Master.
Edward Cardwell is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 695, showing a total increase of 109 since last year. This number includes 554 children of public schools, paying 15*l.* 19*s.* 6*d.*; 31 school-teachers and pupil-teachers, paying 14*l.*; and 110 students who have attended the Central School, from whom 133*l.* 10*s.* have been received. The total amount of fees has been 163*l.* 9*s.* 6*d.*, being 36*l.* 0*s.* 6*d.* less than the sum received last year.

The attendance at the classes has been:—Day classes—68 students who have paid from 5*s.* to 20*s.* per quarter; total 103*l.* 7*s.* Evening classes—42 students, who have paid 10*s.* per annum, and from 7*s.* 6*d.* to 20*s.* per session entrance fee. The amount of these fees has been 43*l.* 13*s.*

In the school 27 local medals, 25 second grade rewards, and 33 first grade rewards have been obtained. The school has expended from its own funds 9*s.* 7*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June.

An exhibition of the students' works was held in June.

The amount of aid afforded to the school by the Department has been 82*l.* 2*s.* 6*d.* which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

LEEDS.—(Population in 1851—172,270.)

Established in 1846. It is held at the Mechanics' Institute.

The officers of the committee of management are:—
William B. Denison, Chairman.
John Pickering, Secretary.
Charles Ryan, 1 certificate, Head-Master.
Andrew Stevenson, 2 certificates, Assistant-Master.
James Kennedy is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 2,639, showing a total increase of 1,369 since last year. This number includes 2,069 children of public schools, paying 65*l.* 18*s.*; 420 persons taught in private schools, paying 140*l.*; 100 school-teachers and pupil-teachers, paying 20*l.* 15*s.*; and 50 students who have attended the Central School, from whom 24*l.* 15*s.* have been received. The total fees have been 251*l.* 8*s.*, showing an increase of 101*l.* 6*s.* 4*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—25 students, who have paid 10*s.* 6*d.* per quarter; total, 18*l.* 15*s.* Evening classes—52 students, who have paid from 5*s.* to 10*s.* 6*d.* per quarter. The amount of these fees has been 25*l.* 5*s.*

Appendix H. PROVINCIAL ART SCHOOLS.

No student has qualified himself for a prize-studentship; a properly qualified student was transferred from the Dundee School of Art, to act as pupil-teacher.

In the school, 5 local medals, 77 second grade rewards, and 31 first grade rewards have been obtained. The school has expended from its own funds 2*l.* 10*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in May 1858.

The amount of aid afforded to the school by the Department has been 141*l.* 10*s.* 9*d.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

LIMERICK.—(Population in 1851—55,268.)

Established in 1852. It is held at the Athenæum, Cecil Street.

The officers of the committee of management are:—

The Earl of Dunraven, Chairman.
James Bodkin, Secretary.
Thomas Clack, 2 certificates, Head-Master.
Rowland Harris and Augustus Howard are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 324, showing a total increase of 18 since last year. This number includes 220 children of public schools, paying 40*l.*; 20 persons taught in private schools, paying 31*l.*; 10 school-teachers and pupil-teachers, paying 2*l.*; and 74 students who have attended the Central School, from whom 68*l.* 5*s.* has been received. The total amount of fees has been 141*l.* 5*s.*, showing an increase of 22*l.* 15*s.* over the sum received last year.

The attendance at the classes has been:—Day classes—46 students, who have paid 5*s.* per month; total, 42*l.* 10*s.* Evening classes—38 students, who have paid 2*s.* per month; total, 25*l.* 15*s.*

Two students have qualified themselves for prize-studentships, and 1 student has been appointed an Art pupil-teacher provisionally.

The school received 1 Department prize (10*l.*), with 1 National medallion; 10 local medals, 16 second grade rewards, and 16 first grade rewards have been obtained. The school has expended from its own funds 2*l.* 6*s.* 3*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in October.

The amount of aid afforded to the school by the Department has been 90*l.* 5*s.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

LIVERPOOL (NORTH DISTRICT).—(Population in 1851—375,955.)

Established in 1856. It is held in the Collegiate Institution, Shaw Street.

The officers of the committee of management are:—

Rev. F. S. Howson, M.A., Chairman.
J. Gregory Jones, Secretary.
William J. Bishop, Head-Master.
Samuel Berkinshaw, 3 certificates, Assistant-Master.
Jane Brown is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,496, showing a decrease of

15 since last year. This number includes 1,208 children of public schools, paying 299*l.* 10*s.*; 170 school-teachers and pupil-teachers, paying 55*l.* 10*s.*; 118 students, who have attended the Central School, from whom 47*l.* 9*s.* 10*d.* has been received. The total amount of fees has been 402*l.* 9*s.* 10*d.*, showing an increase of 204*l.* 1*s.* 5*d.* over the sum received last year.

In the school 9 local medals, 98 second grade rewards, and 69 first grade rewards have been obtained.

The annual inspection and public examination took place in June 1858.

An exhibition of the students' works was held in June 1858.

The amount of aid afforded to the school by the Department has been 150*l.* 11*s.* 10*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

LIVERPOOL (SOUTH DISTRICT).—(Population in 1851—375, 955.)

Established in 1855. It is held in the Liverpool Institute, Mount Street.

The officers of the committee of management are:—

James Mulleneux, Chairman.
Astrup Cariss, Secretary.
John Finnie, 3 certificates, Head-Master.
Ephraim Pugh, Assistant-Master.
Malcolm Guthrie and Emma Gammage are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,436, showing a total increase of 340 since last year. This number includes 1,125 children of public schools, paying 110*l.*; 53 school teachers and pupil-teachers, paying 8*l.* 8*s.* 4*d.*; and 258 students who have attended the Central School, paying 178*l.* 13*s.* 11*d.* The total amount of fees has been 297*l.* 2*s.* 3*d.*, being 21*l.* 17*s.* less than the sum received last year.

The attendance at the classes has been:—Day classes—44 students, who have paid 1*l.* per quarter; total, 84*l.* 2*s.* 6*d.* Evening classes—214 students, who have paid 6*s.* 6*d.* per quarter; total, 95*l.* 1*s.* 5*d.*

One student was qualified for a prize-studentship, and one has been appointed an Art pupil-teacher provisionally to her obtaining that distinction.

In the school, 28 local medals, 43 second grade rewards, and 46 first grade rewards have been obtained. The school has expended from its own funds 5*l.* 19*s.* 9*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June 1858.

The amount of aid afforded to the school by the Department has been 104*l.* 2*s.* 9*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

MACCLESFIELD.—(Population in 1851—39,048.)

Established in 1851. It is held in the Mechanics' Institute.

The officers of the committee of management are:—

The Mayor, Chairman.
Thomas Kelly, Secretary.
George Stewart, Head-Master, 1 certificate.
R. Hassall, Z. Pritchard, and E. Kelly are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 823, showing a total increase

Appendix H. — Provincial Art Schools.

of 80 since last year. This number includes 661 children of public schools, paying 31*l.* 3*s.* 0*d.*; 12 persons taught in private schools, paying 35*l.*; 12 school-teachers and pupil-teachers, paying 1*l.* 4*s.* 0*d.*; and 138 students who have attended the Central School, from whom 54*l.* 19*s.* 1*d.* has been received. The total amount of fees has been 122*l.* 6*s.* 1*d.*, showing an increase of 33*l.* 12*s.* 1*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—42 students, who have paid 3*s.* 6*d.* per month; total, 28*l.* 2*s.* 1*d.* Evening classes—108 students, who have paid from 1*s.* to 1*s.* 6*d.* per month; total, 26*l.* 17*s.*

One student has qualified himself for a prize-studentship; two students were appointed Art pupil-teachers provisionally.

The school received 1 Department prize (10*l.*), with 1 national medallion; 4 local medals, 24 second grade rewards, and 36 first grade rewards have been obtained. The school has expended from its own funds 14*l.* 4*s.* 10*d.* on account of examples, besides the loca expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in January.

An exhibition of the students' works was held in January, and was attended by 1,500 persons.

The amount of aid afforded to the school by the Department has been 268*l.* 10*s.* 0*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

MANCHESTER.—(Population in 1851—316,213.)

Established in 1842. It is held in the Royal Institution, Bond Street.

The officers of the committee of management are:—

Robert N. Philips, M.P., Chairman.
Richard Aspden, Secretary.
James A. Hammersley, Head-Master.
John Evans and T. Rowe, 2 certificates, Assistant-Masters.
R. Routledge, Elizabeth Johns, Janet J. Morris, Juliana Shepherd, and George Roberts are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 3,789, showing a total increase of 2,619 since last year. This number includes 3,141 children of public schools, paying 179*l.* 4*s.* 0*d.*; 75 persons taught in private schools, paying 270*l.*; 26 school-teachers and pupil-teachers, paying 18*l.* 2*s.* 0*d.*; and 547 students who have attended the Central School, from whom 97*l.* 5*s.* 0*d.* has been received. The total of fees have been 564*l.* 11*s.* 0*d.*, showing an increase of 249*l.* 7*s.* 0*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—144 students, who have paid from 9*s.* to 42*s.* per quarter, and an entrance fee of from 3*s.* to 10*s.* 6*d.*; total, 226*l.* 19*s.* 6*d.* Evening classes—290 students, who have paid from 6*s.* to 10*s.* 6*d.* per quarter, and 1*s.* to 2*s.* entrance fee. The amount of these fees has been 158*l.* 7*s.* 6*d.*

The school received 2 Department prizes (10*l.*), with 2 national medallions; 29 local medals, 119 second grade rewards, and 108 first grade rewards have been obtained.

The annual inspection and public examination took place in December.

An exhibition of the students' work has been held.

The amount of aid afforded to the school by the Department has been 703*l.*, which sum includes the payments for the masters' certificates and other allowances, and payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

NEWCASTLE-UNDER-LYME.—(Population in 1851—10,569.)

Established in 1853. It is held in Brunswick Street.

The officers of the committee of management are :—
Rev. John S. Broad, Chairman.
James Jennings, Esq., Secretary.
Joseph P. Bacon, 2 certificates, Head-Master.
George Read is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 251, showing a total increase of 71 since last year. This number includes 165 children of public schools, paying 15*l.*; 9 school-teachers and pupil-teachers, paying 4*l.* 5*s.* 0*d.*; and 77 students who have attended the Central School, from whom 32*l.* 15*s.* 6*d.* have been received. The total fees have been 52*l.* 0*s.* 6*d.*, showing an increase of 22*l.* 6*s.* 9*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—8 students, who have paid 8*s.* per month, or 30*s.* per session, total 12*l.* 15*s.* 0*d.* Evening classes—71 students, who have paid from 1*s.* 6*d.* to to 1*s.* 9*d.* per month. The amount of these fees has been 20*l.* 0*s.* 6*d.*

No student has qualified himself for a prize-studentship; one student has been appointed an Art pupil-teacher provisionally.

In the school 8 local medals, 8 second grade rewards, and 23 first grade rewards have been obtained. The school has expended from its own funds 15*l.* 19*s.* 1*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in February.

An exhibition of the students' works was held in February, and was attended by about 1,000 persons.

The amount of aid afforded to the school by the Department has been 46*l.* 17*s.* 0*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

NEWCASTLE-ON-TYNE.—(Population 1851—87,784.)

Established in 1844. It is held in the Museum Building, Westgate Street.

The officers of the committee of management are :—
Joseph Watson, Chairman.
James Leathart, Secretary.
William B. Scott, Head-Master.
John Lord, 2 certificates, Assistant-Master.
Bartholomew Bowlt and John N. Pendrick are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,269, showing a total increase of 24 since last year. This number includes 894 children of public schools, paying 61*l.* 10*s.*; 28 persons taught in private schools, paying 21*l.* 10*s.*; 34 school-teachers and pupil-teachers, paying 3*l.* 7*s.* 6*d.*; and 313 students who have attended the Central School, from whom 162*l.* 8*s.* 1*d.* have been received. The total fees have been 248*l.* 15*s.* 7*d.*, showing an increase of 25*l.* 3*s.* 10*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—114 students who have paid 7*s.* per month, or 2*s.* per quarter; total, 78*l.* 8*s.* 6*d.* Evening classes—261 students, who have paid 2*s.* 6*d.* per month; total, 105*l.* 9*s.* 7*d.*

Two students have qualified themselves for prize-studentships, two of them having been appointed Art pupil-teachers provisionally.

Appendix H.

PROVINCIAL ART SCHOOLS.

The school received one Department prize (10*l.*), with one national medallion; 11 local medals, 27 second grade rewards, and 47 first grade rewards have been obtained. The school has expended from its own funds 6*l.* 11*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June.

Two exhibitions of the students' works have been held.

The amount of aid afforded to the school by the Department has been 230*l.* 1*s.* 6*d.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

NORWICH.—(Population in 1851—68,195.)

Established in 1846. It is held in Broad Street, St. Andrew's.

The officers of the committee of management are:—

Sir Henry T. Stracey, Bart., Chairman.
Claude L. Nursey, Secretary.
Claude L. Nursey, 1 certificate, Head-Master.
Charlotte Cartright, G. Easter, G. Searles, and H. Jean, pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,442, showing a total increase of 130 since last year. This number includes 1,190 children of public schools, paying 25*l.*; 29 school-teachers and pupil-teachers, paying 6*l.* 3*s.* 6*d.*; and 223 students who have attended the Central School, from whom 181*l.* 6*s.*6*d.* has been received. The total fees have been 212*l.* 10*s.*, showing an increase of 24*l.* 1*s.* 6*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—76 students who have paid from 10*s.* 6*d.* to 1*l.* 1*s.* per quarter, and an entrance fee of from 3*s.* to 5*s.* Evening classes—176 students who have paid 2*s.* per month, and 1*s.* entrance fee. The amount of fees received from both these classes was 187*l.* 10*s.*

In the school 16 local medals, 24 second grade rewards, and 70 first grade rewards have been obtained. The school has expended from its own funds 5*l.* 13*s.* 7*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in February.

An exhibition of the students' works was held in February 1858.

The amount of aid afforded to the school by the Department has been 219*l.* 10*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

NOTTINGHAM.—(Population in 1851—57,407.)

Established in 1843. It is held in Stoney Street.

The officers of the committee of management are:—

Lewis Heymann, Chairman.
William Richards, Secretary.
Frederick R. Fussell, 1 certificate, Head-Master.
Joseph Fussell, 1 certificate, Assistant-Master.
Henry L. Roberts is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 1,611, showing a total increase of 171 since last year. This number includes 1,264 children of public

schools, paying 41*l.*; 42 school-teachers and pupil-teachers, paying 7*l.* 2*s.*; and 305 students who have attended the Central School, from whom 173*l.* 16*s.* 6*d.* have been received. The total fees have been 221*l.* 18*s.* 6*d.*, showing an increase of 58*l.* 6*s.* over the sum received last year.

The attendance at the classes has been :—Day classes—65 students who have paid 5*s.* to 12*s.* per month; total, 43*l.* 14*s.* Evening classes—282 students, who have paid 2*s.* per month or 5*s.* per quarter. The amount of these fees has been 137*l.* 4*s.* 6*d.*

The school received two Department prizes (10*l.*), with two national medallions; 17 local medals, 72 second grade rewards, and 83 first grade rewards have been obtained. The school has expended from its own funds 12*l.* 4*s.* 9*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in February.

An exhibition of the students' works was held in the Exchange Hall, and was attended by 7,896 persons. (The receipts were nearly 50*l.*)

The amount of aid afforded to the school by the Department has been 118*l.* 8*s.* 6*d.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

PAISLEY.—(Population in 1851—47,952.)

Established in 1848. It is held in Gilmour Street.

The officers of the committee of management are :—

D. Murray, Esq., Chairman.
Messrs. Martin and Hodge, Secretaries.
William Stewart, Head-Master.
John Broom, John Blair, James M'Farlane are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 787, showing a total increase of 402 since last year. This number includes 640 children of public schools, paying 5*l.* 10*s.* 10*d.*; 11 school-teachers and pupil-teachers, paying 2*l.* 6*s.*; and 136 students who have attended the Central School, paying 64*l.* 8*s.* 6*d.* The total amount of fees has been 72*l.* 5*s.* 4*d.*, showing an increase of 1*l.* 12*s.* 4*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—24 students, who have paid 4*l.* per month; total, 14*l.* 10*s.* 4*d.* Evening classes—123 students, who have paid from 2*s.* to 3*s.* 6*d.* per month; total, 49*l.* 18*s.* 2*d.*

Four students qualified themselves for prize-studentships, and 3 students were appointed Art pupil-teachers provisionally.

The school received 2 Department prizes (10*l.*), with 2 national medallions; 6 local medals, 22 second grade rewards, and 20 first grade rewards have been obtained. The school has expended from its own funds 1*l.* 3*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in June.

An exhibition of the students' works was held in September, and was attended by 300 persons.

The amount of aid afforded to the school by the Department has been 345*l.* 6*s.*, which sum includes the payments to the master, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

Appendix H.

PROVINCIAL ART SCHOOLS.

PENZANCE.—(Population in 1851—10,000.)

Established in 1853. It is held in Regent House.

The officers of the committee of management are:—
W. Matthews (the Mayor), Chairman.
R. Couch, Esq., Secretary.
Henry Geoffroi, 1 certificate, Head-Master.
Richard Pentreath is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 680, showing a total increase of 342 since last year. This number includes 513 chidren of public schools, paying 38*l.*; 40 persons taught in private schools, paying 55*l.* 4*s.* 6*d.*; 43 school-teachers and pupil-teachers, paying 16*l.*; and 84 students who have attended the Central School, from whom 19*l.* 2*s.* 3*d.* have been received. The total amount of fees has been 128*l.* 6*s.* 9*d.*, showing an increase of 62*l.* 1*s.* 6*d.* over the sum received last year.

The attendance at theclasses has been:—Day classes—11 students, who have paid 4*s.* per month, and an entrance fee of 1s.; total, 8*l.* 4*s.* Evening classes—81 students, who have paid 2*s.* per month, or 15*s.* per annum, and 1*s.* entrance fee; total, 10*l.* 18*s.* 3*d.*

Three students have qualified themselves for prize-studentships, 1 of them having been appointed Art pupil-teacher.

In the school 9 local medals, 18 second grade rewards, and 34 first grade rewards have been obtained.

The annual inspection and public examination took place in May.

The amount of aid afforded to the school by the Department has been 82*l.* 18*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

SHEFFIELD.—(Population in 1851—135,310.)

Established in 1843. It is held in Arundel Street.

The officers of the committee of management are:—
Thomas Dunn, Chairman.
Benjamin Wightman, Secretary.
Young Mitchell, Head-Master.
Godfrey Sykes, 1 certificate, Henry D. Lomas; Assistant-Masters.
C. Green, R. G. Smith, T. B. Bradley, are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 925, showing a total increase of 532 since last year. This number includes 535 children of public schools, paying 95*l.*; 33 school-teachers and pupil-teachers, paying 10*l.* 15*s.*; and 357 students who have attended the Central Schools, paying 300*l.* 12*s.* 6*d.* The total amount of fees has been 406*l.* 7*s.* 6*d.*, showing an increase of 156*l.* 19*s.* 9*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—87 students, who have paid from 15*s.* to 1*l.* 5*s.* per month; total, 139*l.* 5*s.* Evening classes—314 students, who have paid 5*s.* per quarter; total, 172*l.* 2*s.* 6*d.*

The school received 5 Department prizes (10*l.*), with 5 national medallions; 28 local medals, 66 second grade rewards, and 22 first grade rewards have been obtained. The school has expended from its own funds 31*l.* 3*s.* 2*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in December.

An exhibition of the students' works was held in February, and was attended by about 1,200 persons.

The amount of aid afforded to the school by the Department has been 567*l.* 13*s.*, which sum includes the payments for the masters' certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

SOUTHAMPTON AND ROMSEY.—(Population in 1851—Southampton, 37,385; Romsey, 5,644.)

Established in 1855. It is held in the Victoria Assembly Rooms, Portland Terrace, Portland Street.

The officers of the committee of management are:—
Henry Buchan, Esq., Chairman.
R. Critchlow, Esq., Secretary.
W. J. Baker, 1 certificate, Head-Master.
George Gouk, John R. Sharp are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 989, showing a total increase of 459 since last year. This number includes 680 children of public schools, paying 30*l.*; 80 persons taught in private schools, paying 38*l.* 11*s.*; 35 school-teachers and pupil-teachers, paying 7*l.* 6*s.*; and 194 students who have attended the Central and Branch Schools, from whom 52*l.* 8*s.* 10*d.* have been received. The total amount of fees has been 128*l.* 5*s.* 10*d.*, showing an increase of 37*l.* 9*s.* 4*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—55 students, who have paid from 4*s.* to 8*s.* per month; total, 55*l.* 13*s.* Evening classes—128 students, who have paid 2*s.* per month; total, 42*l.* 12*s.* 10*d.*

Five students have qualified themselves for prize-studentships, two of them having been appointed Art pupil-teachers.

The school received 1 Department prize (10*l.*), with 1 national medallion; 11 local medals, 26 second grade rewards, and 26 first grade rewards have been obtained.

The annual inspection and public examination took place in August.

An exhibition of the students' works was held in August, and was attended by about 300 persons.

The amount of aid afforded to the school by the Department has been 99*l.* 10*s.* 4*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

STIRLING.—(Established in 1858, but not yet examined.)

STOKE-UPON-TRENT.—(Population in 1851—57,942.

Established in 1847. It is held in the Town Hall.

The officers of the committee of management are:—
C. M. Campbell, Chairman.
Oliver Lodge, Secretary.
Silas Rice, Head-Master.
J. P. Bacon, 2 certificates; Hughes Protat, 1 certificate, Assistant-Masters.
William Drake and Alexander Fisher are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 296, showing a total increase of 3 since last year. This number includes 128 children of public schools,

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paying 40*l.*; 8 school-teachers and pupil-teachers, paying 2*l.* 5*s.*; and 160 students who have attended the Central School, from whom 121*l.* 19*s.* have been received. The total amount of fees has been 164*l.* 4*s.*, being 2*l.* 13*s.* less than the sum received last year.

The attendance at the classes has been :—Day classes—75 students, who have paid 1*s.* 6*d.* per month, and an entrance fee of 2*s.*; total, 52*l.* 4*s.* Evening classes—93 students, who have paid 2*s.* per month and 2*s.* entrance fee. The amount of these fees has been 72*l.*

No students qualified themselves for prize-studentships, two of them having been appointed Art pupil-teachers provisionally to their obtaining that distinction. One student has been sent to the Training School.

The school received 4 Department prizes (10*l.*), with 4 national medallions; 25 local medals, 22 second grade rewards, and 20 first grade rewards have been obtained.

The annual inspection and public examination took place in February.

An exhibition of the students' works was held during the year.

The amount of aid afforded to the school by the Department has been 172*l.* 5*s.* 6*d.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

STOURBRIDGE.—(Population in 1851—7,847.)

Established in 1852. It is held in Talbot Lane, Market Street.

The officers of the committee of management are :—
J. H. H. Foley, Esq., M.P., Chairman.
G. P. Yeats, 3 certificates, Head-Master.
John Northwood is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 585, showing a total increase of 34 since last year. This number includes 377 children of public schools, paying 50*l.*; 95 persons taught in private schools, paying 20*l.*; 6 school-teachers and pupil-teachers, paying 2*l.* 2*s.*; and 107 students who have attended the Central School, from whom 77*l.* 5*s.* 9*d.* have been received. The total amount of fees has been 149*l.* 7*s.* 9*d.*, showing an increase of 10*l.* 8*s.* over the sum received last year.

The attendance at the classes has been :—Day classes—23 students, who have paid 10*s.* 6*d.* per quarter; total, 18*l.* 2*s.* 3*d.* Evening classes—90 students, who have paid 6*s.* per quarter; total, 61*l.* 5*s.* 6*d.*

Four students have qualified themselves for prize-studentships, one of them having been appointed an Art pupil-teacher.

In the school, 10 local medals, 19 second grade rewards, and 26 first grade rewards have been obtained. The school has expended from its own funds 18*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in November.

Two exhibitions of the students' works have been held during the year.

The amount of aid afforded to the school by the Department has been 76*l.* 17*s.* 8*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

SWANSEA.—(School closed.)

TAUNTON.—(Population in 1851—14,176.)

Established in 1856. It is held in Bath Place.

The officers of the committee of management are :—

The Right Hon. Henry Labouchere, Chairman.
The Rev. William A. Jones and J. Blizard, Secretaries.
J. B. Williamson, 2 certificates, Head-Master.
James Babb and Thomas Crump are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 583, showing a total increase of 278 since last year. This number includes 325 children of public schools, paying 10*l.* 7*s.* 6*d.*; 63 persons taught in private schools, paying 49*l.* 7*s.* 6*d.*; 23 school-teachers and pupil-teachers, paying 7*l.* 1*s.* 6*d.*; and 172 students who have attended the Central School, from whom 261*l.* 10*s.* 3*d.* has been received. The total amount of fees has been 328*l.* 6*s.* 9*d.*, showing an increase of 174*l.* 18*s.* 9*d.* over the sum received last year.

The attendance at the classes has been :—Day classes—69 students, who have paid from 15*s.* to 1*l.* 1*s.* per month, and an entrance fee of from 2*s.* 6*d.* to 5*s.*; total 205*l.* 3*s.* 3*d.* Evening classes—103 students, who have paid 10*s.* per quarter and 2*s.* per month, and from 1*s.* to 2*s.* entrance fee. The amount of these fees has been 105*l.* 14*s.* 6*d.*

The school received three Department prizes (10*l.*), with three national medallions; 25 local medals, 22 second grade rewards, and 33 first grade rewards have been obtained. The school has expended from its own funds 3*l.* 0*s.* 7*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in May 1858.

The amount of aid afforded to the school by the Department has been 143*l.* 5*s.* 2*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

TAVISTOCK.—(Population in 1851—8,068.)

Established in 1854. It is held in West Street.

The officers of the committee of management are :—

J. Benson, Esq., Chairman.
T. Greenfield, Secretary.
W. E. Pozzi, 2 certificates, Head-Master.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 339, being a decrease of 22 since last year. This number includes 202 children of public schools, paying 15*l.*; 51 persons taught in private schools, paying 72*l.*; 17 school-teachers and pupil-teachers, paying 5*l.* 10*s.* 3*d.*; and 69 students who have attended the Central School, from whom 58*l.* 8*s.* 9*d.* have been received. The total amount of fees has been 151*l.* 9*s.*, being 34*l.* 16*s.* less than the sum received last year.

The attendance at the classes has been :—Day classes—42 students, who have paid 4*s.* per month, and an entrance fee of 1*s.*; total, 45*l.* 11*s.* Evening classes—34 students, who have paid 2*s.* per month, and 1*s.* entrance fee. The amount of these fees has been 7*l.* 17*s.* 6*d.*

In the school, 2 local medals, 10 second grade rewards, and 35 first grade rewards have been obtained.

The annual inspection and public examination took place in April.

The amount of aid afforded to the school by the Department has been 30*l.* 4*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

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TRURO.—(Population in 1851—10,733.)

Established in 1853. It is held in River Street.

The officers of the committee of management are :—
W. M. Tweedy, Esq., Chairman.
Thomas Solomon, Secretary.
H. T. Anderson, 1 certificate, Head-Master.
Robert Lenderyou is the pupil-teacher.

The total number receiving inscruction in drawing in or through the agency of the school during 1858 has been 406, showing a total increase of 152 since last year. This number includes 324 children of public schools, paying 20*l.*; 11 persons taught in private schools, paying 10*l.* 10*s.*; 16 school-teachers and pupil-teachers, paying 3*l.* 14*s.* 6*d.*; and 55 students, who have attended the Central Schools, from whom 28*l.* 12*s.* have been received. The total amount of fees has been 62*l.* 16*s.* 6*d.*, being 12*l.* 3*s.* 6*d.* less than the sum received last year.

The attendance at the classes has been :—Day classes—22 students, who have paid 4*s.* per month, and an entrance fee of 1*s.*; total, 18*l.* 6*s.* Evening classes—49 students, who have paid 2*s.* per month, and 1*s.* entrance fee. The amount of these fees has been 14*l.* 0*s.* 6*d.*

No students qualified themselves for prize-studentships, but one of them was appointed an Art pupil-teacher provisionally.

In the school, 2 local medals, 22 second grade rewards, and 20 first grade rewards have been obtained. The school has expended from its own funds 50*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in April.

An exhibition of the students' works was held in April, and was attended by several hundred persons.

The amount of aid afforded to the school by the Department has been 66*l.* 12*s.* 8*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

WARRINGTON.—(Population in 1851—23,363.)

Established in 1853. It is held in Bold Street.

The officers of the committee of management are :—
Col. Wilson Patten, M.P., Chairman.
Edward Brewtnall, Secretary.
J. C. Thompson, 2 certificates, Head-Master.
J. Ingham, J. F. Waldron, and E. Haydon are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 957, showing a total increase of 53 since last year. This number includes 653 children of public schools, paying 20*l.*; 154 persons taught in private schools, paying 125*l.*; 48 school-teachers and pupil-teachers, paying 19*l.* 9*s.*; and 102 students who have attended the Central School, from whom 128*l.* 12*s.* 6*d.* have been received. The total amount of fees has been 293*l.* 1*s.* 6*d.*, showing an increase of 17*l.* 0*s.* 6*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—62 students, who have paid from 10*s.* 6*d.* to 1*l.* 1*s.* per quarter; total, 78*l.* 11*s.* 6*d.* Evening classes—60 students, who have paid 2*s.* per month. The amount of these fees has been 30*l.* 2*s.*

Two students have qualified themselves for prize-studentships, and have been appointed Art pupil-teachers. One student has been sent to the Training School at South Kensington.

The school received 2 Department prizes (10*l.*), with 2 national medallions; 25 local medals, 61 second grade rewards, and 31 first grade rewards have been obtained. The school has expended from its own funds 9*l.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in December.

An exhibition of the students' works was held in December, and was attended by about 3,000 persons.

The amount of aid afforded to the school by the Department has been 204*l.* 5*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

WATERFORD.—(Population in 1851—25,000.)

Established in 1852. It is held in the Savings Bank, and has an elementary branch at Portland.

The officers of the committee of management are:—
The Very Rev. E. N. Hoare (the Dean), Chairman.
George Gibson, Secretary.
Samuel McCloy, 1 certificate, Head-Master.
James McElroy and Elizabeth Jones are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 268, showing a total increase of 18 since last year. This number includes 157 children of public schools, paying 50*l.*; 40 persons taught in private schools, paying 10*l.*; 13 school-teachers and pupil-teachers, and 58 students who have attended the Central School, from whom 78*l.* 13*s.* 3*d.* have been received. The total amount of fees has been 138*l.* 13*s.* 3*d.*, showing an increase of 14*l.* 14*s.* 4*d.* over the sum received last year.

The attendance at the classes has been:—Day classes—45 students, who have paid from 9*s.* to 10*s.* 6*d.* per session. Evening classes—26 students, who have paid from 3*s.* 9*d.* to 5*s.* 3*d.* per quarter. Total, 88*l.* 13*s.* 3*d.*

Three students have qualified themselves for prize-studentships, and two of them were appointed Art pupil-teachers provisionally.

The school received 2 Department prizes (10*l.*), with 2 national medallions; 10 local medals, 25 second grade rewards, and 11 first grade rewards have been obtained.

The annual inspection and public examination took place in November.

An exhibition of the students' works was held in October, and was attended by 1,260 persons.

The amount of aid afforded to the school by the Department has been 84*l.* 8*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

WENLOCK.—(See COALBROOKDALE.)

WOLVERHAMPTON.—(Population in 1851—49,985.)

Established in 1853. It is held in Darlington Street.

The officers of the committee of management are:—
The Earl of Dartmouth, Chairman.
Charles B. Mander, Secretary.
W. J. Muckley, 4 certificates, Head-Master.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 820, showing a total increase

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of 471 since last year. This number includes 706 children of public schools, paying 5*l.*; 15 school-teachers and pupil-teachers, and 99 students who have attended the Central School, from whom 177*l.* 9*s.* 6*d.* has been received. The total amount of fees has been 182*l.* 9*s.* 6*d.*, showing an increase of 64*l.* 10*s.* 6*d.* over the sum received last year.

The attendance has been :—Day classes—33 students, who have paid 15*s.* per quarter; total, 93*l.* 7*s.* 6*d.* Evening classes—71 students, who have paid 5*s.* per quarter, and 2*s.* 6*d.* entrance fee; total, 84*l.* 2*s.*

In the school 20 second grade rewards and 34 first grade rewards have been obtained. The school has expended from its own funds 5*l.* 4*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination of the public schools took place in December; the central school was not examined.

An exhibition of the students' works was held in August, and was attended by a small number of persons only.

The amount of aid afforded to the school by the Department has been 48*l.* 17*s.*, which sum includes the payments for master's certificates and other allowances, the money awards on account of the children who obtained rewards, the cost of rewards, &c.

WORCESTER.—(Population in 1851—27,828.)

Established in 1851. It is held in Pierpoint Street.

The officers of the committee of management are :—
The Right Honourable Lord Ward, Chairman.
Henry Aldrich, Esq., Honorary Secretary.
James Kyd, Head-Master.
William P. Bowen, 2 certificates, Assistant-Master.
Thomas Adams is the pupil-teacher.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 930, showing a total increase of 244 since last year. This number includes 603 children of public schools, paying 20*l.*; 31 school-teachers and pupil-teachers, paying 4*l.* 7*s.* 6*d.*; and 296 students who have attended the Central School, from whom 82*l.* 5*s.* have been received. The total amount of fees has been 106*l.* 12*s.* 6*d.*, being 5*l.* 14*s.* 6*d.* less than the sum received last year.

The attendance at the classes has been :—Day classes—72 students, who have paid from 2*s.* to 12*s.* per quarter; total, 24*l.* Evening classes—250 students, who have paid from 2*s.* to 5*s.* 6*d.* per quarter. The amount of these fees has been 53*l.* 17*s.* 6*d.*

Two students have qualified themselves for prize-studentships, one of them having been appointed an Art pupil-teacher.

The school received 1 Department prize (10*l.*), with 1 national medallion; 22 local medals, 18 second grade rewards, and 31 first grade rewards have been obtained. The school has expended from its own funds 5*l.* on account of examples, 14*l.* 10*s.* in prizes to students, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in September.

An exhibition of the students' works was held in November, and was attended by 709 persons.

The amount of aid afforded to the school by the Department has been 22*l.* 18*s.*, which sum includes the payments for the masters' certificates and other allowances, the payments to Art pupil-teacher, also the money awards on account of the children who obtained rewards, the cost of medals, medallion, &c.

YARMOUTH (GREAT).—(Population in 1851—30,879.)

Established in 1857. It is held on the South Quay.

The officers of the committee of management are:—
The Mayor, Chairman.
Rev. John B. Bampton, Secretary.
Thomas W. Chevalier, 2 certificates, Head-Master.
Thomas W. Wright and Samuel Swann are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 925, showing a total increase of 545 since last year. This number includes 760 children of public schools, paying 20*l.*; 12 persons taught in private schools, paying 10*l.*; 26 school-teachers and pupil-teachers, paying 8*l.* 0*s.* 6*d.*; and 127 students who have attended the Central School, from whom 116*l.* 14*s.* have been received. The total amount of fees has been 154*l.* 14*s.* 6*d.*, showing an increase of 95*l.* 4*s.* over the sum received last year.

The attendance at the classes has been:—Day classes—64 students, who have paid from 2*s.* 6*d.* to 8*s.* per month, and from 10*s.* to 1*l.* 11*s.* 6*d.* per session, and an entrance fee of 2*s.* 6*d.* to 4*s.*; total, 90*l.* Evening classes—63 students, who have paid 2*s.* per month and 8*s.* 6*d.* per session, and 1*s.* entrance fee; total, 26*l.* 14*s.*

Two students have qualified themselves for prize-studentships, and one student has been appointed an Art pupil-teacher provisionally.

In the school, 6 local medals, 22 second grade rewards, and 47 first grade rewards have been obtained. The school has expended from its own funds 9*l.* 11*s.* 6*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

The annual inspection and public examination took place in February.

The amount of aid afforded to the school by the Department has been 91*l.* 7*s.* 6*d.*, which sum includes the payments for the master's certificates and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, &c.

YORK.—(Population in 1851—40,359.)

Established in 1843. It is held in Minster Yard.

The officers of the committee of management are:—
The Rev. Isaac Spencer, Chairman.
J. B. Atkinson and W. H. Dykes, Secretaries.
John C. Swallow, 4 certificates, Head-Master.
Henry Smith and W. Bevan are the pupil-teachers.

The total number receiving instruction in drawing in or through the agency of the school during 1858 has been 786, showing a total increase of 200 since last year. This number includes 550 children of public schools, paying 8*l.* 3*s.* 6*d.*; 80 school-teachers and pupil-teachers, paying 22*l.* 4*s.*; and 156 students who have attended the Central School, from whom 94*l.* 10*s.* 6*d.* has been received. The total amount of fees has been 124*l.* 18*s.*, showing an increase of 8*l.* 18*s.* over the sum received last year.

The attendance at the classes has been:—Day classes, 56 students, who have paid from 3*s.* 6*d.* to 7*s.* per month, or from 15*s.* to 30*s.* per session, and an entrance fee of 2*s.* 6*d.* to 4*s.*; total 52*l.* 15*s.* Evening classes—128 male and 52 female students, who have paid from 8*s.* to 12*s.* per session. The amount of these fees has been 53*l.* 13*s.*

The school received one Department prize (10*l.*), with one national medallion; 8 local medals, 32 second grade rewards, and 28 first grade rewards have been obtained.

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The annual inspection and public examination took place in February. The amount of aid afforded to the school by the Department has been 142*l.* 3*s.* 6*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to Art pupil-teachers, also the money awards on account of the children who obtained rewards, the cost of medals, medallions, &c.

[*Note.*—In addition to the usual annual inspection and examination held at each School of Art throughout the United Kingdom, the reports of which are given, above, the Inspectors have also during the past year examined candidates for rewards and certificates at the Royal Hibernian School, Dublin, the County School, Leicester, and the Neilson Institute, Paisley. A number of the Royal Engineers were also examined at Chatham, and 9 rewards distributed among them.]

APPENDIX I.

Report by Captain Ryder on Navigation Schools.

Science and Art Department of the Committee of Council on Education, South Kensington.

September 1858.

My Lords having learnt that Dr. Lyon Playfair will leave the Department on the 1st October, consider how the Schools of Navigation should be inspected. They have before them a Directory of the Schools, with proposed rules for their guidance prepared by Dr. Playfair. Before issuing this Directory and making permanent measures for the inspection of the Schools, their Lordships deem it to be desirable that all the Schools should be inspected by a Nautical Officer in Her Majesty's Service, with the view of receiving suggestions from him as to the system upon which it would be best to place them.

My Lords accordingly appoint Captain Ryder, R.N., as a Commissioner of Inquiry for this purpose, and direct that he be furnished with a copy of instructions as to the points to be embraced in the inquiry. Captain Ryder will at the same time follow the general subjects of inquiry suggested by the Directory furnished to him in proof, and will consider what modifications it may be desirable to introduce before it is finally submitted to the Board for ratification.

The Secretary will send a copy of the Minute to the various Schools with a request that the Committee and Masters will give to Captain Ryder every aid in an inquiry so important to the permanent interests of the School.

General Suggestions for Captain Ryder, R.N., on the Points to be embraced in his Inquiry into the present State of the Navigation Schools.

A.—He is requested to ascertain as follows, viz. :—

1. The number of pupils in attendance, and on the books during the year, their age and rank in life ?
2. Average length of attendance of each pupil ?
3. The rate of fees paid, and the amount ?

Appendix I. NAVIGATION SCHOOLS.

B.—The arrangement of classes.
Dividing the school into two parts, viz. :—
1. The adult part for masters, mates, and seamen.
2. The juvenile part for boys going to sea.
The subjects taught.
The state of preparation of the boys and men respectively on entering the school ?
How taught ?
Times of meeting of classes ?

C.—The certificates taken by the master.
The receipts from fees, and the proportion assigned to the master.
Master's certificates.
Master's guarantee.

D.—The supply of masters.
How obtained, naming each case.
Assistant masters.
Are any more wanted ?

E.—The Committee ? who ? and how formed ?
Subscriptions ? whether annual ? the amount and from what quarter ?
Meetings—held when ? and generally what interest the members appear to take.

F.—*Premises*—whether independent or connected with any other institution, rent, taxes, any debt on the house, and total of expenses ? how paid, whether furnished by any corporation ?

G.—Total expenses of the school.

H.—It would be well to have a meeting with the Committee.

NAVIGATION SCHOOLS.—SUGGESTIONS for the FUTURE.

1. Is the certificate allowance of master sufficient ?
2. If not, how to be increased ? and how should he receive a fair remuneration for his labour ?
3. Might not payments be made to him on success of pupils in examinations ?
If so, what payment ? How to be regulated ?
For what subjects ?
If the fees for teaching adults are remunerative, and the fees for boys not remunerative, would it be desirable to pay considerably for successful result of boys' teaching ?
As the boys can attend for some time before going to sea, and may therefore be well instructed, would it be desirable to establish exhibitions to induce them to stay longer at school ?
As the men only stay while their ship is in port, and can only receive an empirical instruction, would it be well to hold out inducements for them to remain longer, and receive a more thorough and systematic instruction ?
Captain Ryder would do well to understand from the Art-Inspectors the working of the Art schools. In the de-

tails there is not much analogy between the Art and the Navigation schools, and it may be doubtful how far the fees in Navigation schools will support the school and the teaching, which they do to a great extent in the Art schools. In considering the subjects of instruction, Captain Ryder will confine his attention to the special studies required to qualify those who attend these schools for their future calling as seamen.

REPORT of an INQUIRY into the STATE of the NAVIGATION SCHOOLS, by Captain ALFRED P. RYDER, R.N., September and October 1858.

MY LORDS,

I BEG to state for the information of the Lord President of the Council on Education that I have concluded the inquiry into the *state* of the Navigation Schools.

Before I commenced I laid down for my guidance a general principle, which I will proceed to state as its influence may be traced in my suggestions for the improvement of the Navigation Schools, viz. :—

That any undertaking entered upon by the Government or by a department of the Government should have in it of necessity the elements of success; and that if after a fair trial entire or partial failure is the result then there should be no delay in adopting one of two courses of procedure, viz., to abandon the undertaking altogether, or to make in it such radical alterations as shall ensure its success, seeing that serious injury results to the public service by the credit and prestige of the Government being weakened.

THE GOVERNMENT IS VERY ANXIOUS TO RAISE THE TONE OF THE COMMERCIAL MARINE FOR THE FOLLOWING REASONS:—

(*a.*) *Because the Commercial Marine supplies even in time of peace a considerable number of men to the* ROYAL NAVY, *and because in time of war we should have to rely upon it almost entirely to enable us to man our ships when our reserves were exhausted, which would soon be the case in a naval war.*

(*b.*) Because on the efficiency of our commercial marine depends to a great extent our position as a commercial country, and on our position as the greatest commercial country rests our supremacy among European nations.

(*c.*) Because to the commercial marine is entrusted every year an immense amount of valuable property. Want of skill, intelligence, and readiness of resource largely increases the yearly loss of this property.

(*d.*) Because to the commercial marine every year are entrusted the lives of a large and increasing number of Her Majesty's subjects. Want of skill, intelligence, and readiness of resource largely increase the yearly loss of life at sea.

(*e.*) Because the commercial marine consists of more than 200,000 persons, and is, therefore, an important portion of the nation, considering it numerically.

(*f.*) Because the commercial marine represents England, its religion, laws, customs, and habits, in every foreign country, and it is desirable that our representatives should cease to exhibit (as is now frequently the case) the worst side of the national character. Large numbers of the sailors in our commercial marine are at present neither good men nor good sailors, but are disorderly, addicted to drink, inefficient at sea and all but useless in harbour. Many of them who reach the rank of mate and master compare disadvantageously in general knowledge with the mates and masters of foreign vessels. There are of course numerous brilliant exceptions. They are to be found chiefly in the service of the large ship-owners. In knowledge of seamanship English masters and mates need not fear a comparison with those of any other nation.

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The Government, anxious to raise the tone of the Commercial Marine, has endeavoured to purify the stream at its source, by the creation or support of Navigation Schools, in order that as soon as possible, by the introduction of well educated lads, its character may be elevated and improved. The Navigation Schools referred to are supported by fees, by local subscriptions, and by aid from the Department of Science and Art. Their object is to offer instruction in the scientific branches of an Education specially adapted to the Nautical Profession.

In commencing an investigation into the present position and prospects of the Navigation schools, it is evidently advisable to ascertain the number of vacancies that occur annually in the commercial marine; these vacancies are occasioned by death, desertion, and change of profession. *It is much to be desired that these vacancies should all be filled by well educated English, Scotch, and Irish lads, for in time of war we could only recruit from the Commercial Marine those sailors who are British subjects.** Moreover there is an especial aptitude in the inhabitants of these islands for acquiring in perfection that knowledge and those habits which combine to form the character of a good seaman.

An estimate of the number of Lads required to supply the annual vacancies in the Commercial Marine.

This investigation may be conducted in two ways. The following attempts to make an estimate are merely rough approxi-

* It is much to be regretted that an increasing proportion of the sailors in the commercial marine are foreigners. See Appendix I. and III. During the last five years the British seamen have increased in number 6 per cent., while the foreign seamen have increased 252 per cent.

mations. I have requested the Registrar-General of Seamen to supply the department with the data referred to in the note.* When all the information is received my estimates can be corrected.

(1.) ROUGH ESTIMATE of the Number of Vacancies occasioned by Death in the Mercantile Marine.

Sailors commence their career at, on an average, 16 years of age. Landsmen have at that age an expectation of life for 35·85 years, or until the age of 52, by the Northampton Tables.

Assuming that seamen remained in active service throughout their life, the annual waste occasioned by death would be (if 200,000 is in round numbers the number of men of all classes in the commercial marine) $\frac{200{,}000}{35{\cdot}85} = 5{,}579$. The fact that seamen

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* The following information has been asked for, and should be obtained periodically, from the Registrar-General of Seamen :—

(1.) The number of apprentices that have shipped for the first time from each of the ports in the United Kingdom, during the years 1856, 1857, 1858. See Appendix II.

(2.) The number of boys, *not* apprentices, that have been shipped *for the first time* from each of the ports of the United Kingdom during the years 1856, 1857, 1858. (No return.)

(3.) The number of men that have shipped *for the first time* from each of the ports in the United Kingdom during the years 1856, 1857, 1858. (No return.)

N.B. At some of the shipping offices they make a notation against the names of first entries. This practice should be the rule.

(4.) The number, their places of birth, &c., as nearly as can be estimated, of masters, chief mates, only mates, second mates, and seamen, including stokers, artificers, engineers, apprentices, boys, in the commercial marine. The total number of all classes in the commercial marine. The number of those that are foreigners and that are British subjects. The number of persons who have obtained certificates in each class of officers in the years 1856, 1857, 1858. See Appendix III. and IV.

(5.) The number of deaths reported in 1856, 1857, classifying them as much as possible, as officers, seamen, &c. See Appendix V.

(6.) In round numbers, what is the average annual waste or drain from the separate and combined effects of death, desertion, and change of profession? See Appendix VI., where I estimate the annual waste to be 10,650.

2,660	deaths from disease and accidents.
1,300	„ from drowning.
6,690	„ from desertion and change of profession.
3,365	annual increase, taking average of last five years.
Total 14,015	annual supply of lads required.

(7.) Average number of seamen and officers at home and abroad. ($\frac{1}{4}$ at home, $\frac{3}{4}$ abroad.)

(8.) Average length of service afloat of a merchant sailor. Assuming that he joins between 15 and 18, at what age on an average does he cease, from whatever cause, to belong to the commercial marine? (No return.) The length of service is estimated approximately in Appendix VI. as 18 years.

It is suggested that the Department should apply for similar returns every year. When it is known that they will be required, it will be easy to provide the information. Approximate returns should be particularly requested in all cases, when accurate information cannot be obtained, and if inquiries may be beneficially made in other directions, the Registrar-General should be requested to name the sources of information and to facilitate the inquiry.

Appendix I. NAVIGATION SCHOOLS.

rarely remain in the service to an advanced age, that many desert, that many, after one or more voyages, change their profession, only proves that the total number of vacancies is largely in excess of 6,000 annually.

Diminished by all the above mentioned causes, the average length of a seaman's career afloat is probably far below 20 years; but adopting that as the average, the number of vacancies occurring annually would be $\frac{200,000}{20} = 10,000$. *See* Appendix V.

(2.) ROUGH ESTIMATE of the present Annual Supply of Apprentices to the Commercial Marine.

I have ascertained that on an average, between the dates of January 1856 and October 1858, a period of two years and nine months, Liverpool and Glasgow entered about 1,100 apprentices annually.

Now the tonnage of Liverpool and Glasgow is about $\frac{1}{6}$ the gross tonnage of the United Kingdom. If ships at the other ports would take and could obtain lads in the same proportion, between 6 and 7,000 apprentices would be entered annually. *See* Appendix II.

We can only observe with regard to this number, that we know it can but represent a small proportion of the vacancies, as large numbers of boys not apprentices, and a large number of men, both foreigners and British subjects, are received on board yearly.

It will be well to state here, with regard to the foreigners in our commercial marine, that their presence is a great blot. They are received and welcomed at present, because the supply of English sailors is small, and the article is frequently anything but desirable. But when we remember that large numbers of English, Scotch, and Irish lads emigrate annually, it is evident that if proper measures are taken to draw them into attending the classes at the Navigation schools, and ultimately to sea, we might retain a large portion of them, so as finally to obviate altogether the necessity of our having any foreigners at all in the commercial navy.

If all vacancies in the commercial marine were filled up by lads specially educated for the profession, then we gather from the above rough estimates that, taking the very lowest, 6,000 lads would be required yearly.

It may be considered an axiom, that to become a thorough good sailor, the career should be commenced in early youth. Lads are not welcomed on board merchant ships until they are 15 or 16 years of age, and they are drawn chiefly from a class of society the boys of which have hitherto left their primary schools at from 12 to 13. There are, therefore, three years of the lad's life in which the greater portion of his time may be best spent in acquiring that knowledge bearing on his future profession, which is taught at a Navigation school. If a sufficient number of Navigation schools, made as attractive as possible, are *not* placed at all our seaports, the lads we wish to secure for the commercial marine will continue to be drawn off to other professions. If

schools that of necessity retain their students three years have demands made on them to the amount of 6,000 annually, it is evident that they should be sufficiently numerous to accommodate 18,000 students.

It would perhaps be inexpedient at once and on an adequate scale to attempt to provide Navigation schools for 18,000 students, nor is it probable that funds would be forthcoming for the purpose.

The first point to be aimed at would apparently be the establishment of an adequate number of schools, so as to offer scientific instruction on the lowest terms to a sufficient number of boys, to supply the demand for educated young men to fill the vacancies in the ranks of masters and mates. Their knowledge of seamanship must of course be gained before the mast.

If the proportion of 1 to 10 represents* with any accuracy the ratio of officers to men (and if in error, it is on the safe side), there are 20,000 officers in the commercial navy. Assuming that the average duration of service as an officer is 15 years, the yearly supply required is 1,300 in round numbers, and the attendance at the classes in the Navigation schools being of necessity, as stated before, for three years, there should be school accommodation for, in round numbers, 4,000 lads. If the schools opened their doors to *day* scholars only, 40 schools for 100 scholars each would be required. If in addition to the 100 day scholars, each school had an evening class of 30, only 30 schools would be required. These schools should, of course, be placed in the centres of supply, the principal seaports.

The boys who enter the commercial marine are at present and are likely to continue to be supplied from five grades of society :—

(1.) The class of gentlemen in reduced circumstances will supply a few.

(2.) The trading class will supply a larger number.
The parents in both these classes will generally manage to feed and clothe their sons during their attendance at the classes of the Navigation school, if the inducements to send their boys to the schools are sufficient. These boys will probably continue to be students at grammar or other schools.

(3.) A lower class, whose sons must work for their livelihood during the day. These lads can only attend the evening school.

(4.) A class whose sons are at charity and workhouse schools. They may be sent at certain hours to the day or evening classes of the navigation schools.
With regard to these schools, the primary inspector should be instructed to encourage them to send their boys to the navigation schools. Any difficulty about the capitation grant or his inspection should be provided for.

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* 1 in 6 appears by the returns lately obtained (see Appendix III.) to more nearly represent the ratio of masters and mates to men.

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(5.) The destitute class, whose sons can only, if not taken in at the union, be received on board school ships, to be clothed, fed, and taught (for expense of school ships, see note).

A navigation school should attract, not only all the boys of the classes above enumerated who may happen, for some reason or other, to *wish to go to sea* at the port where the school is situated, but also as many more healthy, intelligent boys as may be *required* to meet the demand at the port.

Early youth, it has been already stated, is the only time of life at which the special education requisite to make a thoroughly good seaman can be acquired. The period elapsing between the ages of 12–13 and 15–16, spent in developing the intellect, prepares the lad to acquire rapidly and with great facility that intimate knowledge of practical navigation and of seamanship in all its branches which is required.

A commercial navy, fed by a supply of lads that had for three years attended the classes at a Navigation school would challenge comparison for general knowledge and information with any profession in England, and would soon cease to be the last resort of those idle, troublesome fellows, expelled from the agricultural class and the various trades, who are too old, too ignorant, or too profligate ever to make even indifferent sailors.

Having stated what appears to me to be the ground that may be beneficially covered by a network of navigation schools, I will proceed to state what, in my opinion, are—

The means by which a Navigation School may be rendered most attractive and efficient,

Adding briefly in what respect the existing schools fall short of my estimate of what they should be, and offering suggestions for their improvement.*

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* The school at Hull has 90 boys, of whom 40 are going to sea positively, and 40 probably.

„	Newcastle	36	„	3 probably.
„	Sunderland	46	„	46 probably.
„	Leith	8	„	0
„	Aberdeen	4	„	1 probably.
„	Glasgow	1	„	1 and 7 or 8 from the evening school probably.
„	Waterford	8	„	1 probably.
„	Liverpool	6	„	6 probably.
„	Yarmouth	12, and 33 from other schools		35 probably.
„	Shadwell	80	„	12 probably.
„	Well Street	0	„	0
„	Poplar	0	„	0
		291		40 positively, 154 probably.

If school ships, which involve a great expense, were established at the different ports, then a large portion of the boy's three years' course would be occupied in learning practical seamanship, instead of some of the higher branches of study given in the above list.

I have collected some statistics showing the expense of school ships. The Akbar, a frigate at Liverpool, is a reformatory, and has about a 100 boys.

I. *A Navigation School assisted by the Government should offer sound Instruction specially adapted to the Nautical Profession.*

Although at first sight the number of subjects named hereafter may appear large, and the education of too high an order, these objections will vanish when it is remembered that lads are not acceptable on board merchant ships until they are 15–16, because they are of little use, and give trouble; and yet, as has been already stated, if not attracted to the Navigation schools at the age of 12–13, and induced to remain in attendance on the classes until they are 15–16, they will be drawn into some other profession.

The course of instruction which is adopted must necessarily therefore be sufficiently comprehensive to extend over *three* years, and at the same time continue to the last to be specially adapted to conduce towards the boy's success in his profession.*

The subjects which appear to be suitable for boys destined for the nautical profession and retained under instruction from 12–13 to 15–16 are-as follows :—

*(1.) Reading and writing from dictation.
*(2.) First four rules of arithmetic.

} The boys are expected to be proficient in these before entry.

*(3.) Grammar.
(4.) A complete course of arithmetic.
(5.) Algebra to quadratics, with application.
(6.) Geometry, Books of Euclid, I. II. III., and a few propositions in Book IV.

The Venus, also a frigate, is in charge of the Marine Society, and anchored near Woolwich; she is a school ship for destitute lads, and has about 140 boys. In the Akbar, supported partly by local contributions and partly by the Government grant of one shilling a day for each boy, the expense of the establishment is probably reduced to as low a scale as possible. The Marine Society is a corporation which can afford to be more liberal in its arrangements. The Akbar was fitted out an expense of 1,800*l.* but about 1,000*l.* is considered to be sufficient for a fit out, if the hull is in good repair. The Marine Society's ships are always fitted out by the Admiralty without charge. The Akbar costs about 250*l.* a year for repairs, &c.

ESTIMATE of ANNUAL EXPENSE per Boy, deduced from Report.

	Akbar.		Venus.	
	£	s.	£	s.
Food	10	0	13	10
Clothes	4	0	6	0
Management, &c.	10	0	10	10
	24	0	30	0

* No instruction need necessarily be given at the *Navigation Schools* in the subjects marked with an *, nor will proficiency in them, although tested during the *General Examination*, be taken into account when the amount of examination money (Section IX.) is estimated; but at the *Special Competitive Examination* proficiency in these subjects will count with the other subjects.

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(7.) Trigonometry, plane and spherical.
(8.) Navigation.
(9.) Nautical astronomy, including lunar double alt. and Sumner's method.
(10.) Practical use of the instruments used at sea.
(11.) Geography, descriptive, } especially as regards products,
(12.) Geography, physical, } climates, &c.
(13.) Chart drawing ; surveying.
(14.) Free-hand drawing.
*(15.) History, particularly Scripture History and English History.
*(16.) Letter writing ; book-keeping.
(17.) Mechanics and steam-engine.
(18.) Magnetism and electricity in relation to ships.
(19.) Laws of storms and tides.
(20.) Knowledge of the code of signals.
(21.) Mercantile laws and usages, as far as is necessary for the master of a merchant ship.
(22.) Gymnastics.

There is only one school (that at Hull, where the boys are induced to attend for from three to four years,) where this course is attempted, and with considerable success. In the other schools few boys at present attend over one year, and in some instances for no longer a period than three months.

II. *A Navigation School aided by Government should provide a good supply of apparatus, viz., instruments, books, maps, slates, &c. without any charge to the pupils.*

As a general rule the supply is good. In some of the schools additional apparatus is required. Their wants will be stated in another portion of the report.

The rule has been for the local committee and the Department to divide the expense of the apparatus, the fittings being entirely paid for by the local committee.

In Ireland a very liberal supply of sextants, books, maps is given to each school by the Board of Education.

III. *A Navigation School aided by Government should offer valuable prizes in the shape of exhibitions, instruments. books, &c.*

The great difficulty we have to contend with is the reluctance on the part of some parents, the inability on the part of others, to maintain their children during the three years' course.

Exhibitions and prize-schemes should therefore be established on the most liberal footing.

Prizes had been awarded by the Department in only two or three instances before my tour of visits.

(*a.*) I beg to suggest that *prizes* be awarded, when deserved, at all the schools every half year.

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* See note *, p. 151.

The prizes to consist of sextants, watches, instruments, books, &c. The future prizes to be placed at the commencement of the half-year under the charge of the local committee, to be exposed in the schoolroom in a case with a glass lid or cover. (The half-yearly value of the prizes to be about 15*l.*); the prizes to be fairly and openly competed for.

A very limited number of sextants should be given away, not more than one each half-year among all the schools. The prizes not to be awarded except on the most satisfactory proof of the lad's sufficient proficiency.

(*b.*) I beg to suggest that *exhibitions* be established on the following scale, viz., at the rate of twelve for a school giving instruction to 100 boys, or one to every eight boys, and be awarded at all the schools every half year.

The boys after the examination to be divided in the following manner :—

The FIRST DIVISION to consist of all the boys who had attended the Classes for a period under 6 months.

The SECOND DIVISION to consist of all the boys who had atttended the Classes for 6, and under 12 months.

The THIRD DIVISION to consist of all the boys who had attended the Classes for 12, and under 18 months.

The FOURTH DIVISION to consist of all the boys who had attended the Classes for 18, and under 24 months.

The FIFTH DIVISION to consist of all the boys who had attended the Classes for 24, and under 30 months.

The SIXTH DIVISION to consist of all the boys who had attended the Classes for 30, and under 36 months.

Exhibitions at the rate of one in eight boys to be given to the most successful boys in each group.

The exhibitions for the 1st and 2nd Divisions to consist of remission of fee and a donation of 6*d.* a week for ensuing half-year.

The exhibitions for the 3rd and 4th Divisions to consist of remission of fee, and a donation of 1*s.* a week for ensuing half-year.

The exhibitions for the 5th and 6th Divisions to consist of remission of fee, and a donation of 2*s.* a week for ensuing half-year.

This part of my proposal is elastic, the value of the exhibitions can be increased if the principle is approved of, and the number may be extended even to offering an exhibition to every boy attaining a certain degree of proficiency in the studies of the school.

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The chief merits of this plan are (1), that as all the exhibitions are thrown open for competition every half-year, the spirit of emulation is constantly kept alive; it is notorious that the attainment of an exhibition or scholarship which will be held throughout a student's career is often the prelude to idleness. (2.) That exhibitions are placed within the reach of the youngest boys.

The examination to decide on the exhibitions and prizes should take place at the end of the half-year. The questions to be sent from the Department, and the answers to be sealed up in the presence of the boys, and sent to the Department on the evening of the examination day. The prizes and exhibitions should be awarded at the commencement of the next half-year. As the examination should not, if possible, extend over more than one day, the Department might make a selection from among the subjects taught. As the inspector cannot be present, one or more of the local committee should remain in the school during each examination.

The result of each examination should be allowed to be published in the local papers; competition will then be created among the various schools at the sea-port, who will view with great interest the position of their boys on the examination list.

(*c.*) I beg to suggest that all boys who have held exhibitions or gained prizes receive on leaving a *vellum certificate*, naming the fact, and that some of the most deserving receive *medals*, and that those who hold *exhibitions* wear a *badge*.

(*d.*) I beg to suggest that all boys who bring a good character from their captain or shipowner, and that have served on board for one year since they left the navigation school, with a good character, be entitled to receive 1*l.* from the funds of the school.

(*e.*) I beg to suggest that shipowners be induced, if possible, to take boys as apprentices who have attended classes at the Navigation school; this will give a great impetus to the school.

(*f.*) I beg to suggest that the Board of Admiralty be requested to encourage the schools, by drawing their first-class boys from those who have attended the classes.

(*g.*) I beg to suggest that the Board of Admiralty be requested to encourage the schools by throwing open to competition among the prize boys of each year the nominations to master-assistantships, at the Greenwich rate of about 1 to every 100 boys yearly.*

(*h.*) I beg to suggest that the Board of Admiralty be requested to instruct the captains of coastguard ships and commanders of districts to pay an occasional visit to the schools.

An invitation to the boys to visit the coastguard ship would be highly appreciated by them.

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* The pay of a master's assistant is 60*l.* a-year, and he receives rations. Master's assistants become second masters, masters, and ultimately retired commanders and captains.

IV. *A Navigation School aided by Government should provide an ample Educational Staff, whose income should be sufficient, and a certain portion of it fixed, and whose energies should be mainly directed to the Education of the Boys.*

The educational staff, as a general rule, is very insufficient, owing to a school for adults having been generally established in connexion with the school for boys.* This course was adopted chiefly for economical reasons, it being intended that the large fees from the adult class should pay the greater proportion of the expense of the school ; but it has resulted in the boys' school being most seriously injured, as follows, without any compensating advantages.

The boys who pay fees, from 6*d.* to 1*s.* a week, are constantly and unavoidably neglected by the head master, whose interest it is to attend to the adults who pay from 5*s.* to 7*s.* a week ; and even if superior to that motive, the head master cannot leave the adults for more than a few minutes at a time, because, and not unnaturally, they insist on his remaining with them.

The attempt to apply to navigation schools the self-supporting principle successful in other cases has almost entirely failed ; for, whenever an assistant master or master in training (as he is erroneously called, for he receives no training) is appointed, (and when adults and boys are both present, an assistant master is imperatively demanded,) his salary has always, if an assistant master, to the amount of 40*l.*, if a master in training, to the amount of 78*l.*, been paid by the Department.

Moreover, none of the schools are supported or assisted by local subscriptions. (The Trinity Corporation Schools at Hull and Newcastle are, of course, exceptions.)]

The schools have almost entirely failed to win the sympathy or obtain the pecuniary support of the inhabitants of the seaport towns, after the first subscription list for purchasing the site and fittings has been closed, except in some very rare instances.

Moreover, the theory that the Navigation schools can be considered as likely to be in any sense of the word self-supporting, is a fallacy, and can easily be proved to be so.

A navigation master who has a class of 12 adults on an average will find his time fully occupied. The adults consist of masters, mates, and seamen who are being *crammed* for their examination before the local marine board for their certificate, on which their future advancement depends. They are content, therefore, to pay what they consider a high fee, provided they are crammed *rapidly*. They insist on constant attention. They are frequently very ignorant, and, remaining for only five or six weeks, cannot be placed in classes ; individual teaching is necessary, therefore, in every case, hence the small number that one master can teach satisfactorily.

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* The school at Hull is the only navigation school at which *no* adults are received.

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These 12 adults, paying 5*s.* a week, will produce a sum in 46 weeks (allowing the master six weeks' holidays) of 138*l.*, deducting one-third of that sum, 46*l.*, for local expenses, a sum is left of 92*l.*, barely sufficient to pay the master, whose whole time is occupied, throwing him back (during the quarters when the adults are below the average) on his guarantee of 100*l.* from the Department, which, as it extends over only the first year, leaves his future income on a most precarious basis, disturbing his comfort and equanimity, and producing a strong feeling of annoyance and discontent, which, if not allayed by a change of system, will lead, I am fully persuaded to the present race of masters resigning their positions, and promulgating such reports of their treatment, as will prevent any but very inferior men from accepting the appointments.

I have shown above that the adult class only pays, and very insufficiently, the head master, leaving the fees of the boys' class to support, as far as may be, the assistant master. This they, of course, cannot do. Forty boys (the largest number one man can manage, and too large to be managed well) at 6*d.* a week will produce in 46 weeks 46*l.*; deducting one-third, or 15*l.* (an insufficient amount) for local expenses, 31*l.* remains for the master, who, being entitled to 80*l.*, receives the balance of 49*l.* from the Department and the local committee. The latter, having to make up the 9*l.* from the only fund in their possession, their third of the adult masters' fees, are discontented, regard the boys' school as a failure, and as a general rule, with some exceptions, take little or no interest whatever in it. The answer I generally received, when I inquired as to its progress, was as follows :—

"The Department insisted on our establishing a boys' school in addition to the adult school, and therefore we have one ; but it's a great expense, and the fees won't pay both masters and the local expenses, and there must be a change."*

Any analogy attempted to be drawn between the navigation schools as hitherto conducted on the one hand, and primary schools on the other, is fallacious, for the following reasons :—

In connexion with primary schools there is almost universally some active clergyman, layman, or committee, who by his or their exertions supply any deficiency that there may be after the receipt of the Government subsidy and the children's pence.

To find any such person or committee in connexion with the Navigation schools is the rare exception. In many cases the majority of the committee have seldom been within the walls of the building or attended a meeting. No analogy can be drawn, therefore between the cases of primary and Navigation schools. I believe one of the chief reasons of this indifference on the part of the local committees is that the Navigation schools have been regarded as purely secular schools competing with the denomi-

* The boys' schools at Leith, Aberdeen, Glasgow, Waterford, and Liverpool are at present more or less failures.

national schools in the town for the education of the boys who are going to sea. When it is thoroughly understood that the Navigation schools are designed to be purely scientific schools, established to teach certain branches of science as are the Art schools to teach certain branches of art, the greater portion of the indifference and opposition I have noticed will cease, and the local committees of the various schools at each seaport will be willing to send to the Navigation schools, at certain hours of the day, those of their boys who wish to go to sea.

There is, however, this difference between Art schools and Navigation schools, that the former are self-supporting because they teach an accomplishment which is coveted by persons in such ranks of life as enable them to pay readily considerable fees for instruction. If ladies and gentlemen would, in the same numbers and paying the same fees, take lessons in navigation and its cognate sciences, Navigation schools might be made self-supporting, for the students would import into the classes the same courteous treatment of the master, the same patience and forbearance which they evince in the drawing classes, which would enable *one* master as in those classes to instruct at the same time *a large number* of high paying pupils ; but as this is impossible, Navigation schools cannot be expected to be self-supporting to the same extent as are Art schools.

It must not be supposed that the Government navigation master is the only instructor in navigation in the seaport towns. He has invariably a rival or rivals with whom there is a continual struggle for the adult students. The natural result is that the head masters, although, with hardly an exception, zealous intelligent men, yet as their pay has been made dependent on the fees of the adult classes, (which are large, from 5*s.* to 7*s.* a week, while the boys vary from 6*d.* to 1*s.* a week,) they very naturally lay themselves out by incessant attention to the adults to induce as many to come as possible.

As Navigation schools are now constituted, the head master during the whole of the day, and in many cases throughout the evening also, throughout Saturday, throughout the Christmas and Midsummer holidays, has his attention devoted to the adult school, which is of course in another room.

I have spoken of the instruction given to the adults as merely *cramming*. That it deserves this name arises from the following fact,—The examination of the masters and mates at the examiner's office is not sufficiently searching to make it necessary that the persons presenting themselves should have acquired more than a merely mechanical facility in working certain questions in navigation and nautical astronomy. No questions are asked them to test their acquaintance with even the most elementary principles of the science.

So long as this continues to be the case, and the Government insist on no higher attainments on the part of the masters and mates, so long will the labours of their instructors, whether they are Government navigation masters or private individuals, be

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confined merely to *cramming* the masters and mates for their examinations. And so long as one of the duties of the head master of a Navigation school aided by Government is to prepare adults for examination, and *he is given a large but varying pecuniary interest in the work*, so long will a highly educated, active, zealous schoolmaster, whose talents fit him for a large measure of success in the much higher and more important duty of instructing boys, be wasted in *cramming* adults, one of the most repulsive occupations that can be undertaken by a zealous and enlightened instructor.

If the instruction given to the adults by the navigation schoolmaster was of a much better quality than that given by his rivals, more decided benefit would result from maintaining the school for adults ; but the only benefit which the Government schoolmaster appears to confer on the adults is, that by being a better educated man he prepares the adult *quicker*, in five weeks perhaps instead of six ; and being paid to a certain extent by the Government, and not having to pay rent for the schoolroom, his charges are *cheaper*. There is also this advantage in the presence of a Government schoolmaster, that the charges of his rivals are kept down.

There is a general opinion, that as Government has insisted on the examinations, it should provide a schoolmaster. If the Board of Trade, as is much to be desired, raises the standard of examination of the adults, so as to ensure their being grounded properly, then the services of the instructor of the adults will be much enhanced in value, and great pains and labour will be well bestowed on the adults. But even if this alteration took place, I still beg to suggest that *the head master, although responsible for the whole school, be directed to address his whole energies to the boys', entrusting the direct teaching of the adults to an assistant master specially prepared for that duty.*

To ensure this order being strictly obeyed, there is but one sure and certain course to pursue, and that is to *discontinue making the head master's salary dependent on the fees received from the adults.* The mode of paying the head master which I suggest, will be stated presently, and will be found to contain in it amply sufficient incentives to exertion in bringing his boys on. I propose that the educational staff in each school consist of a head master, who has supreme charge over all the schools or classes ; one assistant master to have sole charge of the adults* with another assistant under him if they are too numerous, and a sufficient number of assistant masters and pupil-teachers working in the boys' school under the head master.

The head master should not, if possible, be removed by the Department, or allowed to leave of his own accord, except at

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* If the schools receive, as I propose they shall, aid from the surplus money derived from the fees charged to the adults by the examiners for their certificates, the adult class must of course be continued.

three months' notice, and assistant masters at two months' notice.*

At present there are five different classes of instructor :—

1. *The head master*, paid by a share of the fees, and guaranteed 100*l.* for one year, if his income from all sources falls short of that sum.
2. *The assistant master*, paid { 40*l.* by Department, and 40*l.* by committee.
3. *The master in training*, paid 78*l.* by Department.
4. *The pupil-teacher acting as assistant master*, { 20*l.* by Department, 20*l.* by local committee.
5. *The pupil-teacher* receiving 10*l.* from Department.

The name of master in training is a misnomer, as they receive no training.

I propose that there should be only three descriptions of instructor :—

(1.) The *head master*, receiving payment under various heads : (1.) part of his salary to be fixed, to give him some certainty ; (2.) part variable and rising with his acquirements, viz., the group money ; (3.) part variable and dependent on the proficiency shown by the boys at an examination.

(2.) Two classes of *assistant master*, viz., an *assistant master* to instruct the adult class. He would receive payment under various heads : (1.) part of his salary to be fixed ; (2.) part variable, his group money ; (3.) part variable, being a portion of the fees of the adult class.

An *assistant master* to instruct the boys under the head master. He would receive payment like the head master : (1.) part fixed ; (2.) group money ; (3.) variable, and dependent on the proficiency of the boys.

(3.) *Pupil-teacher* to instruct the boys. He would receive payment under two heads : (1.) a fixed salary ; (2.) part variable, and dependent on the proficiency of the boys.

If this principle of payment is adopted, the ratio that the fixed payment shall bear to the variable will be a subject for serious consideration. I propose that the *total* payment of the masters shall be increased about 30 per cent. on its present rate, and that the *fixed* annual payments be,—

Head master	100*l.*	These sums can of course be differently adjusted by the Department, if the principle is admitted.
First assistant master, for adults	80*l.*	
Second assistant masters, for boys	60*l.*	
Pupil-teacher	15*l.*	

* Two of the local committees were very much aggrieved at the sudden removal, without notice, of masters.

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The group* payment is a well devised scheme to induce the masters to improve themselves, but has been the cause of a great deal of discontent. The head master has no inducement to pass for more groups unless his share of the fees exceeds about 80*l.*, enabling him to clear his guarantee, and the assistant master, receiving no group money at all, has still less inducement to improve himself. *They all state that they were informed that the group money would be paid in addition to their other sources of income.*

I propose that all the masters and assistant masters be allowed their *group money* in addition to their other incomes.

The head masters in charge of adults have found the work so onerous, and the absence of holidays so wearying, as almost to incapacitate them for preparing to pass more groups.

Superannuation.

I am aware that the Committee of Council of Education have decided on not at present entertaining any proposal for superannuating their masters, but I foresee that as the navigation masters discover that their acquirements fit them for more remunerative positions than the masterships of navigation schools, they will leave the Department. One assistant master has just left at a few days' notice, and others are contemplating the step.

To obtain and keep the services of the zealous, intelligent, and very superior men who alone are fit to take charge of navigation schools, I believe a superannuation allowance would be at the same time the greatest and most economical inducement.

I beg to suggest that at 60 *years of age a navigation master be allowed to retire with his group money as an allowance.* This would be a great inducement to remain in connexion with the Department, and to pass in as many groups as possible.

Payment to Masters depending upon the Proficiency of the Scholars.

The direct inducement which I propose to give to the educational staff to bring their schools up to the highest state of efficiency is a *payment in money*, and I have been induced to pro-

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* The masters receive an increase of pay for each group of subjects they pass an examination in :—

	£
Group I. A general acquaintance with the mathematics bearing on navigation	5
Group II. General navigation and nautical astronomy	15
Group III. Adjustment and skilful handling of instruments	5
Group IV. Physical geography	10
Group V. Physics, mechanics, marine steam engine	10
Group VI. Chemistry	5
Group VII. Natural history	5
Group VIII. Chart, freehand, and mechanical drawing	5
	£50

pose this from the sense of the paramount advantage derived in any undertaking from making it the direct *pecuniary* interest of agents to act up to their instructions.

I propose that every head master, every assistant master and every pupil-teacher employed in teaching the boys shall receive a sum of money in addition to his *fixed salary* and his *group money* to depend on and vary with the success of the school at the half-yearly examinations. The mode by which I propose to estimate the amount of this payment will be detailed further on, when I speak of inspections.

It consists of a sliding scale of payment, so contrived that it is the direct pecuniary interest of the head master to bring *all* his boys up to the highest state of proficiency, and also the direct pecuniary interest of *all* the educational staff to *refrain from forcing on the clever boys, if by so doing they neglect the duller boys, and also to refrain from drawing the boys into the upper and more showy subjects to the neglect of the lower, more elementary, but more important subjects,* errors commonly and but too justly ascribed to schoolmasters in their endeavours to give to their schools the *appearance* of high efficiency.*

V. *The Masters of Navigation Schools aided by Government should display great intelligence and aptitude for teaching and should be intimately acquainted with the best methods of instruction.*

As a general rule I have found the masters intelligent and apt to teach. The majority of them have enjoyed the privilege of an education at Greenwich under Mr. Riddle.

It is important that the masters should be drawn from some normal school; Greenwich school appears admirably adapted for such purpose. To draw a large supply of masters from that school, and retain their services, the position of the masters in

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* I am aware that the sliding scale of payment which I propose has the demerit of novelty.

The Committee of Council, fully alive to the advantage of a sliding scale, have provided that, in the *primary schools*, the master's pay shall depend on and vary with the school pence and the capitation grant (a grant which is made to depend upon the attendance of the children), in the *art schools* it is made to depend on and vary with the number of prizes won by the students.

The disadvantage of the former plan is that the sliding scale, being made to depend upon *mere numerical attendance*, both *particular proficiency* and *general proficiency* are ignored.

The disadvantage of the latter is that it is made the master's direct pecuniary interest to force on the clever boys to the neglect of the dull boys, while *general proficiency* and *numerical attendance* are ignored.

There are doubtless good reasons why these very different plans should have been adopted in primary and art schools.

In the scheme of varying payment which I propose for *navigation schools*, both the *general proficiency* of the *school* and the *numerical attendance* of the scholars are made the measures of the masters' emoluments, while the proficiency of individual boys is fostered by prizes and exhibitions.

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a pecuniary point of view must in my opinion be improved. But if this is done an engagement should be entered into to remain as a navigation schoolmaster for a certain time, and after that, not to leave without at least two months' warning.

The Qualifications of the Masters.

I beg to propose that examinations for the position of assistant masters be held half-yearly, and that the examinations be open to all persons whose credentials received previously by the Department are satisfactory. The qualifications being, good character, experience in teaching, and proficiency in all the subjects taught in the navigation schools.

Assistant masters, previous to nomination to head masterships, to pass a second examination. The vacancies among the head masters to be filled up, if possible, by persons who have held in the navigation schools the position of assistant master.

VI. *The Masters of Navigation Schools aided by Government should be zealous in the performance of their duties.*

As a general rule, the head masters show great zeal, but as their pecuniary interests and the urgent calls of the adult class almost entirely draw off their attention from the boys, the latter suffer as much in many cases as if they had a master the reverse of zealous.

To concentrate the head master's attention on the boys, I have proposed that he should cease to participate to any amount in the fees paid by the adults. But as head master he will, of course, have supreme charge of the whole school. The assistant master teaching the adults, will follow his instructions strictly.

VII. *The Navigation Schools aided by Government should be judiciously situated, have large airy rooms, a good playground, gymnastic poles, and a lending library.*

The schools are frequently well situated, but in some cases may be moved with advantage. The schools should of course be as near to the docks as possible. In building new schools this important point should never be lost sight of.

The site is generally low, and the ground is probably expensive, but this is unavoidable. *If the school is to hold adults and boys, three rooms are indispensable*, one for adults, one for the upper or nautical classes, and one for the lower or preparatory classes.*

The only school that has a good playground is Hull, the model school in every respect. Exercise at gymnastics is most beneficial to the boys' health, and confirms them in their choice of the

* In ports where it is impossible to obtain a site on shore, a hulk might frequently be obtained and moored alongside the quay. The Lords Commissioners of the Admiralty have granted various old hulks for this and similar purposes.

naval profession. The lads when they go to sea are much more useful aloft if they have acquired the agility and daring which can alone be gained by gymnastic exercises.

One of the causes of the rapid deterioration in the *physique* of our sailors is the diminution of work aloft consequent on the introduction of steam. When the attention of the local committee is pointedly drawn to the subject of gymnastics, any difficulty in obtaining ground for the purpose can generally be surmounted. The ground under the poles should be covered with tan to lessen the chance of serious accidents, and for the same reason the poles and their supports should be of considerable strength.

A paper of instructions on gymnastic exercises might be obtained from Greenwich, where the lads are distinguished for their skill and agility.

There should be in each school a lending library of books containing information generally useful, and some others of a lighter description. The privilege of using it might be confined with advantage to those boys who continued their studies in their evenings at home. The confining the privilege to these boys would incite to evening work, whereas if the privilege was given to all, evening work would be neglected for the sake of reading the books.

Evening work is a valuable feature in the most successful navigation schools.

VIII. *The Fees in a Navigation School should be carefully adjusted,*

so as not to exclude by their amount any poor boys whom we might wish to admit, or to repel by their insignificance those parents who would attach no value to that which cost them little.

The boys' fees vary from 6*d.* to 5*s.* a week.* I propose that they vary from 1*d.* to 1*s.* a week.

The fees will probably vary, and justly, in every port.

The number of boys required,—the number forthcoming, and various other considerations, will affect the fees.

I am inclined to prefer, when it can be adopted, the plan of a varying fee, according to the position of the parent, a plan which worked so well in the model school of the Dean of Hereford. If my proposal for paying the masters is adopted, the larger portion

* At Hull the boys are admitted free of fee.

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of the fees, after deducting a certain fixed sum, or a certain definite proportion of them for local expenses, will stand in the school accounts to the credit of the local committee, and will be expended from time to time, with the consent of the Department, in paying the masters' salaries, the boys' exhibition money, &c.

In some primary schools where there is a varying fee, its amount is left optional with the parent ; in others it is fixed in each case by the committee. In some seaports, where there is a pertinacious disinclination on the part of the parents of the boys to their going to sea, I have suggested to the committee the undertaking to return all or a portion of the school fees of any boy who has passed above a certain mark, on proof being received that the boy has sailed. This would in many cases act both on parent and child as a great inducement to the boy to go to sea.

IX. *Navigation Schools should be periodically inspected and reported on.*

No systematic course of inspection has been adopted in the schools. There is but one opinion, I believe, on the great importance of periodical inspection.

Two inspections in the year would, I think, meet the requirements of the navigation schools.

Inspection to be really valuable should be *thorough*. Now the subjects in which it is proposed that the boys shall be taught at the Navigation school are very numerous, and none of them should, if possible, be allowed to escape the notice of the inspector and the test of examination.

Assuming that the schools gradually increase in number to 30, and that they give instruction to, on an average, about 100 boys each ; that the inspection takes place twice a year ; that examination money is paid to every master, assistant master, and pupil-teacher, depending for its amount on the proficiency of the school ; and that the examination is so conducted that the schools can be compared together,—the problem to be solved is, to devise a systematic scheme of inspection which shall gain these ends and enable each of the schools to be thoroughly examined in all the 22 subjects in as short a time as possible.

Time is important, because it is very evident that the 30 proposed schools will be widely separate, being situated on the coasts of the United Kingdom, and one day will be fully occupied in proceeding from one school to the other. To bring the whole inspection within a reasonable compass, and to enable the proficiency of the schools to be compared together, I propose that, if possible, no longer time be spent at each school than *one* day.

30 days travelling on Tuesdays, Thursdays, and Saturdays.
30 days inspecting, Mondays, Wednesdays, and Fridays.
10 Sundays.

70 days, or 10 weeks.

Allowing for occasional delays, three months will be occupied in each inspection. The committee would be met, by appointment, between noon and two o'clock on the examination day; the master might be seen on the preceding evening.

To inspect a school thoroughly, where the instruction embraces so large a number of subjects, would occupy from three to four days, *if the usual plan* of allowing *all* the boys to work at *all* the subjects was adopted, and the amount of papers to be looked over would be very considerable.

I propose that there shall be two examinations every half-year, (1) the *general examination*, to measure the progress and proficiency of the navigation classes, and the payment to be made to the educational staff; (2) the *special competitive examination* for prizes and exhibitions. The first will be held in the course of the half-year, in the presence of the inspector and master, the answers, however, to be looked over and valued in London. The second has been already alluded to in Section II., and will be held at the close of the half-year, in the presence of the master and of one or more of the local committee. It will be entirely a written examination, the questions to be sent from the Department. To prevent any suspicion of unfair treatment, the examination books should, after each examination, be sealed up at the close of the day, in the presence of the boys, and sent to London. The prizes and prize studentships will be awarded when the school meets again, at the commencement of the next half-year. The answers will be valued in London, by a person appointed for that special purpose. The practice I have adopted is to give full numbers for an accurate answer, half numbers for an answer which, though inaccurate, shows intelligence.

The inspector who conducts the general examination should have with him various papers of questions of equal value on each subject, so as to diminish the possibility of information as to the questions set at the examination being communicated from one school to the other. The masters have a direct pecuniary interest in preventing any information being sent to the other schools.

I suggest that the *general examination*, to ascertain the amount of *examination money*, be conducted in the following manner :—

The school to be arranged previous to the arrival of the inspector, in five classes, each class separated from the other as far as the arrangements of the school will admit, and the five classes to be so composed as to be about equal, both in average and collective intelligence. No difficulty is experienced by the masters in doing this. The simplest method adopted on my recommendation is to arrange the boys in one long line according to their order of merit as ascertained at a previous examination, give each boy the number of his place, and then separate them into five classes, as follows. This division into classes may be safely left to the head master, as it is his interest that the division should be fair. In many cases his knowledge of the capabilities of the boys will render the previous examination unnecessary.

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Classes.				
I.	II.	III.	IV.	V.
1	2	3	4	5*
10	9	8	7	6*
11	12	13	14	15
20	19	18	17	16
21	22	23	24	25
30	29	28	27	26
31	32	33	34	35
40	39	38	37	36
41	42	43	44	45
50	49	48	47	46
51	52	53	54	55
60	59	58	57	56
61	62	63	64	65
70	69	68	67	66
71	72	73	74	75
80	79	78	77	76
81	82	83	84	85
90	89	88	87	86
91	92	93	94	95
100	99	98	97	96
1,100	1,100	1,100	1,100	1,100

It is evident that the classes will be of nearly equal intellectual value, and each will represent one fifth part of the school as regards ability and proficiency, being composed equally of advanced and backward boys.

The inspector will then select hap-hazard, and without any previous concert with the master, the class which is to commence immediately working at the various subjects, as for instance,—

	Forenoon, 9 to 12.	*Afternoon*, 2 to 5.
I. *Class*	Arithmetic. Algebra.	History. Mechanics.
II. *Class*	Trigonometry. Geometry.	Free-hand Drawing. Chart Drawing.
III. *Class*	Navigation. Nautical Astronomy.	Letter Writing. Writing Dictation.
IV. *Class*	Physical Geography. Magnetism.	Mercantile Law. Law of Storms and Tides.
V. *Class* — Oral Examination.	Reading. Grammar.	Oral. Descriptive Geography. Instruments. Signals.

The whole school in Gymnastics.

* The equality of the division depends upon 6 being placed in the same class with 5, 10 with 1, and so on throughout.

The number won by the boys in a class in a particular subject will be added together and divided by the number of boys in the class; the result will be the mean number for that subject for that class, and the classes being equal, that number will be a measure of the proficiency of the school in that subject. The number of boys in the school multiplied by the sum of the mean numbers will be the number which will determine the sum of money to be apportioned to that school, and divided among the educational staff.

I propose that, as a general rule, with perhaps a few exceptions, 100 shall be the full number for each subject. Giving 100 for the low subjects will induce the masters to pay great attention to the boys' proficiency in them.

Let us suppose that the mean number obtained in the various subjects were as follows, see Note, p. 5 :—

	Mean No.	There being 100 Boys, gross Number.
Trigonometry - -	82	100 × 82 = 8200
Arithmetic - - -	72	100 × 72 = 7200
Navigation - - -	91	100 × 91 = 9100
Algebra - - -	61	100 × 61 = 6100
Geometry - - -	94	100 × 94 = 9400
&c. *&c.*	*&c.*	*&c.*
	Suppose - -	91,700

Then 91,700 would express the aggregate proficiency of the school in question.

The results of the examinations of the schools would be, that each school would obtain different numbers, as for instance,—

Hull - - - - -	123,200
Yarmouth - - - -	91,700
Newcastle - - - - -	15,300

I propose that a sum of money, at the discretion of the Department, be divided* once a year among the schools, in the ratio of the numbers obtained as above, and that notice be given to them to that effect at the commencement of each year, naming the total sum. I propose that the sum won by the school should be divided among the educational staff in the following proportions:—

		£
Head Master	5 shares, but total not to exceed -	30
Assistant Masters, each - -	2 shares, „ „ -	12
Pupil-Teachers, each - -	1 share, „ „ -	6

* I prefer this to any other plan, because the stimulus to exertion will be greater.

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As every progressive step made by the dullest boy who attends the classes tells on the gross number, and through it on the pecuniary gain of the whole staff, the staff will have no temptation to neglect, but on the contrary, every inducement to push on the dull boys, and as proficiency in the lower subjects counts as much as proficiency in the highest, the common fault of neglecting the low subjects would evidently diminish very much the profits of the staff, and will therefore be prevented.

I consider this sliding scale would be preferable to paying the master a certain sum for every prize won in the school, which is a direct temptation and inducement to him to select from time to time the most promising boys, and put them under pressure to make prize boys of them, neglecting the dull boys of the same standing who cannot on that system of reward be productive of any benefit.

Collateral Advantages of this System.

(1.) It becomes the direct personal interest of the staff to retain the boys as long as possible, in order that at each examination, there shall be as many boys as possible well advanced in all the subjects.

(2.) That it becomes their direct personal interest, to select from among the boys presenting themselves for entry, those that are most advanced in the elementary subjects, so that their backwardness may diminish the mean numbers as little as possible.

(3.) That it becomes their direct personal interest to work the school with as few masters as possible, as thereby their individual gains are larger.

(4.) Competition is created among the Navigation schools and their educational staffs. The result of each examination should be allowed to be published in the local papers, and the results of the examinations at all the Navigation schools should be made known at each school.

(5.) The inspector and the Department can see at a glance whether any Navigation school has neglected any subject. The masters could not evade the rigour of this test by any artifice.

(6.) The boys will be induced generally to enter into the spirit of the competition, which will have the best effect. A few only can win the prizes and exhibitions, but all can contribute by their exertions to the comparative success of their school.

(7.) The local committee and the neighbourhood would enter into the spirit of the struggle.

As a long time must elapse between the examination of the first and last school during an inspection, and as the boys are progressing during that time, it is evident that the school first inspected will compare at a disadvantage with the school last inspected. I propose therefore that the school first inspected at

Midsummer be the school last inspected before Christmas, and *vice versâ*, the tour of visits being inverted, and that the mean number for each subject to be used in calculating the examination money be the mean of the two numbers obtained at Midsummer and Christmas. In this way the inequality referred to may be eliminated.

I have frequently noticed during examination that talking and copying are very common. Of the latter fault—it may almost be called a vice—the masters do not appear to take any sufficient notice. I beg to suggest that the inspector, in addition to noting carefully the state of the schools as to cleanliness (of rooms and boys), and as to discipline as shown by silence and no copying, adopt the following method of cure with regard to the latter fault.

As it shows an evident neglect of moral training of the students on the part of the educational staff, and when practised successfully, conduces to the pecuniary benefit of the staff, the punishment should be summary, and conduce to their pecuniary loss. Any boy detected in the act of copying should forfeit all his numbers, and although still counted on the strength of the class, he should not be counted on the strength of the school when the number representing the aggregate proficiency is calculated.

In this way the master would lose all that the boy had or would have contributed to the aggregate number, and the mean number would be diminished by his presence on the strength of the class.

If at a school where there was one head master, one assistant master, and three pupil-teachers instructing boys, 50*l.* was the sum won :—

The head master receiving five shares would have				25*l.*
The assistant-master	two	„	„	10*l.*
And each pupil teacher	one	„	„	5*l.*

in addition to the two other sources of income, viz. the *fixed salary* and the *group money*.

I do not propose that there should be any inspection or examination of the evening classes. They will probably be composed of boys more advanced in age, but very probably less advanced in knowledge than the day classes, and it would be almost impossible to classify them. I propose that a definite proportion of the evening class fees say one half should be divided among the educational staff in the proportion already given. They would take their turn of attendance according to a system of rotation drawn up and approved by the local committee ; the other half of the fees to be paid to the local committee.*

The assistant master in charge of the adult school would be paid a proportion of the adult fees, say one-tenth, and his share of the evening fees if he taught there, but he of course would not share in the boys' examination money.

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* The prize scheme for evening classes which has been established by Sir James K. Shuttleworth might be extended with advantage so as to include the evening classes of the Navigation schools.

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X. *A distinctive Dress or Badge is calculated to have a very good effect on the Navigation Schools.*

The Trinity Board at Hull gives to 80 boys in the Navigation school a neat uniform (blue jacket, blue and white trousers, and blue cap). This has a capital effect on the boys, gives them an *esprit d'ecole*, and acts as a restraint on their conduct outside the schools. I am not prepared, owing to its expense, to recommend the adoption of a dress, but a badge of some kind on the arm or cap would have a good effect.

Note.—The whole expense of teaching and clothing at Hull averages very little more than 6*l.* per boy per annum.

XI. *In Navigation Schools great pains should be taken to ensure punctual Attendance on the part of the Boys.*

The attendance varies very much in the Navigation schools. In some it is very good, in others indifferent. In the best schools careful registers are kept, from an inspection of which the average attendance may be seen at a glance. I beg to suggest that the best form of registers be provided, and that it be made imperative that the register be strictly kept in all the schools, and that the following practice be universal instead of partial, viz., that any boy arriving late is expected to produce a written authority from the master of his school or his parents for his absence. Prizes for good attendance have been found very useful in primary schools. I beg to suggest one prize of 10*s.*, three of 5*s.*, and five of 1*s.* every half-year, or 3*l.* a year in a school of 100 boys.

The following *form of register* is one which I have recommended to some of the school committees, to be adopted in the interim before a register can be issued on authority.

Number.	Boy's Name.	Mon. June 1.		Tues. 2.		Wed. 3.		Thurs. 4.		Friday 5.		Total of half days.	Missed Muster.	Attendance Number.
		a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.	a.m.	p.m.			
1	Jno. Smith.	P ·½	·1	0	1	1	1	·½	1	0	·½	A 6½	4	B 6·1

P means fee *paid*.

The dot means absent at muster. Every dot involves a forfeit of $\frac{1}{10}$ of a day; 1 means present throughout the half day; $\frac{1}{2}$ is given if the boy arrives over half an hour, and less than one hour after muster; and 0 if he does not appear at all, or arrives over one hour after muster.

At the close of every half-year, each boy's attendance numbers, as shown in column B, are added up, to ascertain who have earned the prizes for attendance.

Every week the figures in column A are added up, and divided by the number of boys who have attended at all during the week. The result will be the average attendance in half-days of those who attended at all during the week. A weekly return will then be drawn up in the following shape :—

Date.	Number on Register.	Present during the Week.	Absent.			Average attendance in half-days of those who attended at all during the week
			Sick.	With reasonable cause.	Without reasonable cause.	
June 1 to 8	82	72	5	3	2	9·2
„ 8 to 15	80	74	3	3	0	9·3

I have also suggested that another book be kept by the head master, in which the names of all the boys who have attended the classes are entered, in the following form :—

Boy's Name. (Written by himself.)	Date of Entry.	Age on Entry.	Father's Occupation.	Present School, if any.	Proficiency on joining.	Date of leaving.	Cause of leaving.	Prizes obtained.	Any information as to his after career.

I have also suggested that the names of all prize boys be printed on the walls of the schoolroom.

Mr. Scaping, the very intelligent head-master at Hull, attaches great value to a book in which he enters good and bad marks against the boys' names. These are given during the daily lessons. The prizes given by the Trinity Board are awarded to the boys with the largest number of good marks.

Having given at length suggestions for improving the internal constitution of the Navigation schools, to make them as attractive as possible to parents and boys, I will proceed to state what would be the probable expense of the plan proposed by me. I am aware that the expense will be considerable, but as I did not receive

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any instruction naming any limit to the sum that the Department might have in their power to spend on the schools, I have throughout my suggestions considered efficiency as the *first* object and economy as the second.

A rough Estimate of the Expense of a Navigation School, if the Alterations I propose are carried into effect.

The Navigation class is supposed to consist of 100 boys; 12 adults in the forenoon and afternoon; 30 adults, apprentices, and boys in the evening class.

	£	s.
100 day boys, fee 6*d.* a week, as an average between 1*d.* and 1*s.*; for 46 weeks - - - - - - - - - - -	115	0
Evening classes—30 students, averaging 6*d.* a week for 46 weeks -	34	10
12 adults at 5*s.* a week for 52 weeks* - - - - - -	156	0
Receipts - - - - - - - - - -	305	10

Masters' Payments.

	Fixed Payment.	Group Money, probably.	Examination Money. Maximum.	Share of Half Evening Fees.	$\frac{1}{10}$th of Adult Fees.	Total.
	£	£	£	£ s. d.	£	£ s. d.
Head Master. Upper school of boys	100	30	30	7 17 0	—	167 17 0
1st Assistant Master. For adults.	80	20	—	3 2 9	15 12	118 14 9
2d Assistant Master. Lower boys.	60	20	12	3 2 9	—	95 2 9
1st Pupil-Teacher. Upper boys.	15	—	6	1 11 4	—	22 11 4
2d Pupil-Teacher. Lower boys.	15	—	6	1 11 4	—	22 11 4
Total - -	270	70	54	17 5 2	15 12	426 17 2

* Great inconvenience is expected to attend the breaking up of the *adult* class for the Christmas and Midsummer holidays, as their vessels are frequently in harbour for only a few weeks at a time. I have assumed that some arrangement will be made among the masters to relieve the assistant-master in charge of the adult class of his charge for a portion of the holidays. I have made the estimate on the assumption that the number of adults is 12. Many of the masters undertake a much larger number.

Expenditure.	£	s.
Salaries of masters and pupil teachers	394	0
Value of prizes at the rate of 15*l.* per half year, and 3*l.* for attendance	33	0
Value of exhibitions—		
4 boys' excused fees and rec. 6*d.* a week	9	4
4 boys' excused fees, and rec. 1*s.* a week	13	16
4 boys' excused fees, and rec. 2*s.* a week	23	0
	46	0
	£473	0

Receipts.	£	s.	
Received by local committee—			
Half evening fees	17	5	
All boys fees	115	0	
$\frac{9}{10}$ of adult fees	140	8	
Total receipts	272	13	
Deduct local expenses maximum estimate*	50	0	
Remaining in hand	£222	13	

	£	s.	d.
Average yearly expenditure on school	473	0	0
Receipts, less local expenses	222	13	0
Deficit to be made up by the Department	£250	7	0

The education of the boys would cost the Department about 2*l.* 10*s.* per boy per annum.

N.B.—If there were 22 adults, and they were charged 7*s.* a week, as at Liverpool, and could be instructed properly by one master, the schools would be self-supporting.

The Department would receive every quarter an account of fees received, money paid, and money due to the masters, and would have to pay the difference. The most expensive schools would be the small schools, having, say, 20 to 30 boys, and 5 to 6 adults, and an evening class of 10. For they would equally with the large school require a head master for the boys, and an assistant for the adults; but the schools will, probably, in every case start with a small number of pupils.

Thirty navigation schools would be supported at an annual expense to the Department, if there were only 12 adults in each, of - - - £7,510

Assuming that the freehold sites were purchased by contributions raised in the town, and that the Government was prepared to pay half the expense of building the schools, and that the schools cost 1,500*l.* each :—

	£
Then the Government contribution would amount to 30 × 750	22,500
And half the price of fittings, about 100*l.* in each school	1,500
	£24,000

* I suggest this sum as a maximum, but the local committee should be enjoined to exercise the strictest economy with regard to the local expenses. The rule of the Department, to contribute 50 per cent. of the value of the books and apparatus in the first instance, and for further supplies, 40 per cent., should be adhered to.

Appendix I.
NAVIGATION SCHOOLS.

Many of the schools might be smaller than those above indicated, but the total expense of building would be about the same.

In Ireland the schools are built and the masters paid entirely by the Board of Education, and the master receives *all* the fees.

If I am touching on a matter beyond my province in drawing attention to two sums of money which I beg to suggest might with great propriety be appropriated to the building and support of the Navigation schools, I trust the object I have in view may be a sufficient apology.

(1.) The fees received at the ports where there are local marine boards are in excess of the expenditure to the amount, I am informed, of about 8,000*l.* a year.

This sum would support more than 30 navigation schools of 100 boys each.

(2.) When seamen die in the commercial marine their effects are sold, and on the return of the vessel to England, the money received, together with the wages due, is paid over to a department of the Government. Every exertion is made to ascertain who are the heirs of the deceased seamen. In many cases their exertions meet with no success. A large balance, amounting, I am informed, to more than 50,000*l.* has accumulated under this head, and might, I beg to suggest, be well expended in building navigation schools for the benefit of the profession to which the deceased seamen belonged.

The principal obstacles in the way of success, in addition to the inefficiency of the schools, the absence of prizes, &c., are three in number.

It is my firm belief that if the Department assist liberally the establishment of navigation schools, placing them on a proper footing, and stating that they are schools established for the *sole* purpose of giving special instruction in scientific subjects to boys intended for the *Royal Navy and the Commercial Marine*, these three obstacles will *gradually* vanish. They are,—

(I.) *A Disinclination on the part of Shipowners to enter Boys.*

In reply to my inquiries the owners of *steamers* stated, "We "don't want boys, who eat as much as men, are of very little "use, and give a great deal of trouble ; we want men."

Steam having superseded the use of sails to a great extent, boys, who in sailing vessels are invaluable for light work aloft, are not valued in steamers.

Many of the sailors, so-called, that we find in steamers differ very little from landsmen, except that they are not sea-sick, they can take the wheel and pull an oar. To all the valuable qualities of a true sailor, which were developed by and almost entirely due to his work aloft, viz., agility, readiness of resource, indifference to all danger that may be escaped by bodily activity, as distinct from that solid courage which all Englishmen possess, the steam sailor can lay slight claim.

In the Royal Navy we want the superior class of sailors, and if possible those alone. The partial substitution of steam for sails, while it has injured our own sailors has, in the same way and for the same reason, injured those in the commercial marine, on whose aid and support we may at any time be thrown for a supply of seamen.

It is most important, therefore, that every impulse should be given to keep up in the commercial navy both the quantity and quality of the seamen; it is much to be regretted, therefore, that the same disinclination to take boys, although fortunately in a less degree, exists among the shipowners of *sailing vessels*.

Lads enter on board merchant ships, some as apprentices, some as boys.

In the employment of the larger shipowners apprenticeships are highly valued.* The proportion of apprentices to tonnage at present is about 1 to 200 tons. Before the repeal of the navigation laws, it was by Act of Parliament 1 to every 100 tons.

The disinclination to enter boys will, I believe, gradually vanish when the attention of the shipowners, as a body, is attracted to the valuable class of boys who will attend the Navigation schools, for they will be induced to reflect, that although at first sight it may appear to be more economical to enter no boys or apprentices, or a very few only, and those at very low wages,† yet that by so doing they are contributing indirectly, but yet surely and certainly, to the deterioration of the whole class of seamen, and to the ultimate injury of the shipowning interest.

(II.) *A Disinclination on the part of parents to send their Boys to Sea.*

While sailors are, what they frequently are at present, not the most moral or respectable members of society it is probable and natural that many parents would regret their sons' choice of the sea as a profession.

But as sailors and masters improve by the aid of navigation schools, where they will be instructed in their youth, and are received in sailors' homes at every port where their vessels touch, this class of objections will gradually become obsolete; and the profession of the sailor will take its proper place by that of the high skilled mechanic as one of the noblest professions a working man's son can adopt, being also one of the highest paid; 3*l.* and 4*l.* a month besides victuals and medical attendance being the not uncommon emoluments of a merchant seaman. Moreover, the profession of a sailor, if he is a steady man, may be rendered both healthy, improving, and entertaining, and acts most bene-

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* The value attached to an apprenticeship varies largely with the employs, the port, &c. Mr. Green *charges* 180*l.* for a four-years' apprenticeship as a midshipman. Large shipowners at Glasgow and elsewhere *pay* 35*l.* for a similar term to a common apprentice.

† Owing to the low rate of wages referred to, large numbers of apprentices run every year, after they have served a portion of their time.

Appendix I. Navigation Schools.

ficially on the character and temper. Steam and science are rapidly diminishing the longest voyages, and long periods of absence, one of the not unnatural objections of a parent, are becoming the exception instead of the rule.

The wish to go to sea is implanted by Providence, doubtless for the wisest purposes, in large numbers of the boys of these islands, frequently in those who have never seen the sea. Those parents, ministers, or schoolmasters who take upon themselves to thwart this natural and laudable wish, going the length, as they frequently do, of treating the boy's desire as an evidence of a vagabond and depraved taste, may be fairly charged with the responsibility of the boy's immoral and depraved life, if such unfortunately is the result of his going to sea, for his naval career is probably commenced by running away from home, and he thus severs all those domestic ties which conduce so much to the preservation of purity of life and manners.

This conduct on the part of parents should be deprecated by every one who has the best interests of his country at heart.

Every respectable and well conducted boy who desires to go to sea should be aided and assisted to do so, and this course should be systematically adopted throughout the country. The Government, by the support of navigation schools, show their opinion on this subject. It only remains for the schools to be put on a proper and liberal footing, worthy of the Government and of the object which they are intended to serve. When this is done, the profession of the sailor will be rescued in the minds of the lower classes from all the odium which at present surrounds it.

(III.) *A Disinclination on the part of Boys to go to Sea.*

This disinclination exists in some ports and not in others, it will decrease wherever it exists when Navigation schools, established on a liberal footing, offering the inducements I have suggested, are placed near the docks in every seaport town of any size or importance. It is advisable that the schools should be so placed that the boys can when out of the school play about among the shipping, witness and long to imitate the evolutions of the sailors aloft, &c.

An attractive evening class will have to be established for the instruction of boys who have to work for their livelihood during the day, and for apprentices. I have proposed that half the fees be given to the educational staff, to insure their taking a direct pecuniary interest in the evening class.

In concluding this report, I wish to state, that I am fully impressed with the great benefit that the establishment of good Navigation schools would confer directly on the Royal Navy, the Commercial Marine, and the country ; and that I see every reason for believing, that if the schools are placed on a proper footing, the classes will be largely attended, and the schools will answer every purpose for which they are established. The limited number of *thirty* Navigation schools, which I have suggested, should be forthwith established, although only pro-

fessing to assist in providing a sufficient supply of educated young men to fill up the vacancies among the masters and mates, yet cannot fail to tell with the best effect on the commercial marine generally. For these well-educated lads, who, after leaving the Navigation schools, have to struggle through that large body, the seamen of the commercial marine, before they can win the prizes of their profession, must raise the tone of the class through which they pass.

If the thirty schools are established, and after two or three years are evidently working well, it will be worth considering whether more schools of a simpler and less expensive character should not be established to educate a sufficient number of lads fully to supply the vacancies in the seamen class.

The alterations I have proposed in the mode of payment of the educational staff are those upon which I desire to lay the most stress; they have had but one object in view, the making it the personal *pecuniary* interest of each member of the staff to devote himself zealously to those duties, and to no other, which the Department wishes him to perform. In individual cases, we might appeal to higher motives than these, but in dealing with a body of men, however upright and conscientious, I am firmly convinced that there is no safer course than the appealing to the lower motive in aid of the higher.

I have already drawn up and sent to the Department an account of each school, with the examination I conducted, and also replies to various questions suggested by the directory furnished to me in proof.

I have, &c.

ALFRED P. RYDER, Capt. R.N.

Appendix

NAVIGATION SCHOOLS.

I.

13,200 Foreigners were serving in the Mercantile Marine in 1854, natives of the following countries:—

Americans (U.S.)	3,888	Russians	44
Austrians	532	Prussians	563
Belgians	198	Spaniards	388
Danes	428	Swedes	1,512
Germans	319	French	479
Greeks	76	Various, viz., South Americans, Chinese, &c., &c.	2,499
Hollanders	1,030		
Italians	110		
Norwegians	570		
Portuguese	564	Total	13,200

J. H. BROWN,
Registrar-General of Seamen and Shipping.

Nov. 26, 1858.

II.

A RETURN of the Number of Apprentices bound and registered at the several Ports of the United Kingdom, during the year 1856.

Name of Port.	Number Registered.	Name of Port.	Number Registered.
Aberystwith	5	Fleetwood	2
*Arundel	52	Folkestone	3
Barnstaple	15	Fowey	3
Beaumaris	2	Gainsborough	1
Berwick	3	Gloucester	15
Bideford	17	Goole	19
Boston	5	Grimsby	13
Bridgwater	15	*Hartlepool	312
Bridport	3	Harwich	1
*Bristol	83	*Hull	176
Caernarvon	9	*Ipswich	30
*Cardiff	73	Lancaster	7
Cardigan	26	*Liverpool	943
Carlisle	3	Lowestoft	14
Chepstow	8	Llanelly	26
Chester	0	Lyme	0
*Colchester	81	Lynn	3
Cowes	12	Maldon	17
*Dartmouth	88	*Maryport	31
Deal	1	*Milford	40
Dover	2	*Newcastle	145
Exeter	27	Newhaven	5
Falmouth	12	Newport	23
Faversham	29	Padstow	12

Name of Port.	Number Registered.	Name of Port.	Number Registered.
Penzance	8	Grangemouth	2
*Plymouth	38	Greenock	85
Poole	2	*Inverness	2
Portsmouth	23	Irvine	16
Preston	5	Kirkaldy	9
Ramsgate	18	Kirkwall	12
Rochester	16	*Leith	42
Rye	10	Lerwick	0
Saint Ives	1	*Montrose	30
*Scarborough	50	Perth	4
Scilly	8	*Peterhead	34
*Shields	1,415	Port Glasgow	0
*Shoreham	60	Stornoway	0
*Southampton	33	Stranraer	0
*Stockton	62	Wick	4
*Sunderland	583	Wigtown	0
*Swansea	83	Ballina	45
Teignmouth	5	*Belfast	0
Truro	0	Coleraine	0
Wells	2	Cork	17
Weymouth	4	Drogheda	9
*Whitby	106	*Dublin	50
*Whitehaven	143	Dundalk	0
Wisbeach	18	Galway	0
Woodbridge	2	Limerick	9
Workington	22	Londonderry	0
Yarmouth	23	Newry	0
Jersey	8	Ross	1
Guernsey	13	Skibbereen	0
*London	1,393	Sligo	2
*Aberdeen	134	Strangford	4
Air	4	Tralee	0
Alloa	2	Waterford	14
Arbroath	23	Westport	0
Banff	19	Wexford	10
Borrowstoness	1		
Campbeltown	0	Total, 1856	7,410
Dumfries	22		
*Dundee	97	Total, 1857	6,850
*Glasgow	141		

J. H. BROWN,
Registrar-General of Seamen.

Nov. 26, 1858.

Note.—An * has been placed against the names of the ports that sent 30 and over 30 apprentices to sea in 1856. They are 32 in number, and sent 6,678 apprentices to sea in that year. A. P. R.

Appendix I.

NAVIGATION SCHOOLS.

III.

General Register and Record Office of Seamen,
Adelaide Place, London Bridge, June 26, 1858.

RETURN of the Number and Tonnage of British Registered Vessels, exclusive of River Steamers, employed in the Home and Foreign Trade of the United Kingdom in the Year 1857 (not including repeated voyages), with the Number of Men employed, classified according to Capacity—Masters are NOT included. This Return embraces Vessels belonging to the Channel Islands, but not Vessels belonging to the Colonies.

Ships.	Tons.	Men.	Classification of Crews.									
			Mates.	Petty Officers.	A.B. Seamen.	O.S. Seamen.	Apprentices and Boys.	Other Persons.	Engineers.	Firemen.	Foreigners.	Lascars.
19,328	4,211,482	176,387	21,204	13,232	66,854	16,828	23,974	12,640	1,612	4,896	14,375	772

NOTE.—Home-trade ships are ships trading on the coasts of the United Kingdom, or to ports within the limits of the river Elbe and Brest. Foreign-going ships are ships trading beyond those limits.

No ship is included which has not been reported as a Foreign-going ship within four years, or as a home-trade ship within one year.

Lascars are not included under the head of foreigners.

Many apprentices are serving in the capacity of mates.

J. H. BROWN,
Registrar-General of Seamen and Shipping.

RETURN of the Number of Men (exclusive of Masters) employed in Vessels belonging to the United Kingdom and Channel Islands in the Years 1851, 1852, 1853, 1854, 1855, 1856, and 1857, distinguishing British from Foreign.

Vessels registered in the Colonies are not included.

Years.	British.	Foreign.	Total.
1851	136,144	5,793	141,937
1852	153,863	5,700	159,563
1853	165,174	7,351	172,525
1854	149,216	13,200	162,416
1855	155,610	12,927	168,537
1856	160,597	13,321	173,918
1857	162,012	14,375	176,387

J. H. BROWN,
Registrar-General.

General Register and Record Office of Seamen,
London, July 19, 1858.

Note.—The masters are about 19,000 in number, including masters of coasters. A. P. R.

IV.

RETURN of the Number of Persons who have passed their Examinations during the Years 1856, 1857, to the 25th November 1858, setting forth the several Capacities for which they passed.

Capacity.	Years.		
	1856.	1857.	1858.
Extra Masters - - - -	22	16	33
Ordinary Masters - - -	1,223	1,047	887
First Mates - - - -	689	539	419
Only Mates - - - -	1,223	895	580
Second Mates - - - -	940	830	666
Total - - - -	4,097	3,327	2,585

J. H. BROWN,
Registrar-General of Seamen and Shipping.

Nov. 26, 1858.

V.

TABLES of MORTALITY of SEAMEN for the Years 1855, 1856, and 1857 extracted from Tables prepared at the Board of Trade.

1855.

Ages.	Total Deaths.	Number Drowned, included in Total.
Under 20 - - - -	553	250
20 and under 30 - - -	1,235	405
30 and under 40 - - -	546	137
40 and under 50 - - -	252	53
50 and under 60 - - -	89	13
60 and upwards - - -	17	4
Unknown - - - -	925	170
	3,617	1,032

1856.

Ages.	Total Deaths.	Number Drowned.
Under 20 - - - -	595	289
20 and under 30 - - -	1,549	574
30 and under 40 - - -	548	143
40 and under 50 - - -	245	59
50 and under 60 - - -	105	20
60 and upwards - - -	20	5
Unknown - - - -	981	256
	4,443	1,346

Appendix I.

NAVIGATION SCHOOLS

1857.

Ages.	Total Deaths.	Number Drowned.
Under 20 - - - -	644	322
20 and under 30 - - -	1,333	527
30 and under 40 - - -	507	173
40 and under 50 - - -	223	75
50 and under 60 - - -	67	13
60 and upwards - - -	25	9
Unknown - - - -	990	370
	3,789	1,489

Note.—The following is an attempt, from the few facts and returns that are available, to give an estimate of the probable numbers of vacancies that occur in the Commercial Marine, from the combined effects of desertion and change of profession; the number that occur from death being known. The facts that may be gathered from the returns, and on which the conclusion must be founded, are the number of the Commercial Marine, 200,000 in round numbers; the period of commencing the naval career, 16 years; the tables of mortality and the laws of probability which (in the case of the Northampton tables) give 35·85 years as the probable duration of life of a boy in good health at 16; the average probable number of deaths in such a body, viz. 5,579; the statistical fact that 2,660 only do die of disease and 1,300 from drowning.

If I am not mistaken, the following ratio, if not absolutely correct, will afford an approximation to the information required; as—

The supply required to fill up vacancies by death in a body of 200,000 men who commence a career in good health at 16 years of age, and all die in harness, viz., by Northampton tables, 5,579. : { Probable average length of life after commencing that career which is also ascertained from the Northampton Tables, 35·85 years. } :: { Number of deaths that actually do occur annually in the said profession from disease, 2,600. } : { The average period of time that the 200,000 persons remain in that profession, 17 years.

If this is true, then $\frac{200,000}{17}$ or 12,350 is the number of vacancies occurring annually, of which, 2,660 occur from death from diseases, accidents, &c., 1,300 from drowning, leaving about 8,390 owing to desertion, &c. &c.

The difference between 2,660 and 5,579 cannot be accounted for on the assumption that there is at present less sickness and mortality among the seamen than on shore; we have no reason for supposing that such is the case. It evidently arises from their short stay in the service. For a more accurate investigation, see Appendix VI.

VI.

A further Investigation into the Number of Men who leave the Commercial Marine yearly, in addition to those who die by Disease, Accident, and Drowning, with the view of ascertaining the Number of annual Vacancies, and the Number of Lads required to fill them up.

Let the average age on entry be 16.

Let the number of men in the Commercial Marine - $= S$

Let the number of men who *leave* every year by desertion, by change of profession, exclusive of those who die by disease, &c. - - - - $= r$

Let the number of seamen who are drowned every year - - - - - - $= w$

Let the number of seamen who die from all causes except drowning - - - - $= d$

Let the number of men who remain alive of those who have *left* the service at any time - - $= R$

Let the number of men *now* alive who have ever been in the service, including those still serving - $= M$

Let the number of men who die every year of those who have ever been in the service - - $= D$

Let the number of men who die every year per 1,000, of those who have reached the age of 16 years, as ascertained from tables of mortality - - $= p$

Let the number of seamen who enter every year - $= E$

Let the probable length of life of a healthy lad at 16 - $= L$

Then, since all who enter, die eventually —

Therefore, (1) $E = D$, if S remains constant ; and

(2) $E = r + w + d$

$\therefore D = r + w + d.$

But $D = \frac{S + R}{L}$

$\therefore \frac{S + R}{L} = r + w + d.$

Now R = the sum of a series in arithmetical progression, of which the first term consists of those seamen who left the service alive last year, or r + those who remain alive, of those who left the service the year before last ; or $\left(r - \frac{p\,r}{1000}\right)$ + &c.

$$R = r + \left(r - \frac{p\,r}{1000}\right) + \left(r - \frac{2\,p\,r}{1000}\right) + \left(r - \frac{3\,p\,r}{1000}\right) + \text{&c.}$$

Appendix I. NAVIGATION SCHOOLS.

Now $S = n\left(\frac{2a + \overline{n-1}\,d}{2}\right)$ when S = sum, a the first term, n the number of terms, d the difference.

$$\therefore R = L\left(r - \frac{\overline{L-1}\,p.\,r}{2 \times 1000}\right)$$

$$\therefore \frac{S + L\left(r - \frac{\overline{L-1}\,p.\,r}{2 \times 1000}\right)}{L} = r + w + d.$$

$$\therefore \frac{S}{L} + r - \frac{\overline{L-1}\,p.\,r}{2 \times 1000} = r + w + d.$$

$\therefore$ Subtracting r from both sides —

$$\frac{S}{L} - \frac{\overline{L-1}\,p.\,r}{2 \times 1000} = w + d$$

$$\therefore r = 2000\left(\frac{\frac{S}{L} - w - d}{\overline{L-1}\,p}\right).$$

Now the values of L and p are to be found from tables of mortality, laws of probability, &c., and S = 200,000 in round numbers.

One of the tables, whose accuracy has been until lately most relied on, is the Northampton Table.

This gives as the value of L = 35 · 85, and of p = 13 · 9.

Owing to the improved condition of the poor, the greater attention paid to sanitary measures, &c., the Northampton Tables no longer represent with accuracy the probable length of life on shore; but the lives of the seamen class have probably not as yet been much lengthened by these causes. I have, therefore, adopted as my guide the Northampton Tables as probably the most accurate.

Substituting for S, L, and p, their values 200,000, 35 · 85, and 13 · 9,—

$$\therefore r = 2000\left(\frac{\frac{200000}{85 \cdot 35} - d - w}{34 \cdot 85 \times 13 \cdot 9.}\right)$$

$$= 2000\left(\frac{5579 - 2660 - 1300}{484 \cdot 415}\right)$$

$$= 6690$$

And as w = 1300
and d = 2660 } See Appendix V.

$$\therefore D = 10650$$

$$\therefore \frac{200000}{10650} \left\{ \begin{array}{l} = 18 = \text{average length} \\ \qquad\qquad \text{of service} \end{array} \right\} \text{afloat.}$$

And 18 + 16 = 34, the average age of sailors when they leave the service from whatever cause.

$$\text{And since } R = L\left(r - \frac{\overline{L-1}\,p.\,r}{1000}\right)$$

$$= 35\cdot85\left(6690 - \frac{34\cdot85 \times 13\cdot9 \times 6690}{1000}\right)$$

$$R = 123{,}656.$$

$$\text{And } M = S + R$$

$$= 323{,}656.$$

S is yearly increasing in number, owing to the expansion of commerce.

The average annual increase, as deduced from the returns of the last five years, is 3,365.

∴ Total number required every year to fill up the vacancies—

Of those who leave the service -	6,690
Of those who are drowned - -	1,300
Of those who die of disase in the service - - - -	2,660
The average annual increase -	3,365
Total supply required -	14,015

Careful investigations, conducted by an experienced actuary who has access to the statistical returns of the Registrar-General of Deaths, and the tables of the insurance offices, will probably result in different values being assigned to *p*, L, and *r*, and the investigation itself may assume a simpler and more accurate shape.

But the above results are sufficiently accurate for the purposes of this report, if they draw attention to the large field of useful employment for the lads of these islands which is offered by the Commercial Marine, and demonstrate that encouragement and aid towards the establishment of Navigation schools may be given without any fear of more schools being established than will suffice to instruct the yearly supply of lads that are required.

ALFRED P. RYDER.

Appendix I.

NAVIGATION SCHOOLS.

ABSTRACT of RETURNS from NAVIGATION SCHOOLS for the Year 1858.

ABERDEEN.—(Population in 1851—71,973.)

Established in 1857. It is held in 13, Regent Quay.

The officers of the committee of management are :—

Chairman ex-officio, John Webster, Advocate, Lord Provost.
Secretary, James F. Kellas.
Head-Master, Edward Henessey, 1 certificate.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 172, showing a total decrease of 12 since last year. The total fees have been 132*l.* 17*s.* 6*d.*, showing an increase of 3*l.* 15*s.* 6*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are :—Masters, 21 ; chief mates, 17 ; only mates, 22 ; second mates, 30 ; seamen, 38 ; apprentices, 30 ; boys and trade apprentices, 6 ; boys, 8 ; total number of students, 172.

The following is the rate of fees paid by adults and boys per week :—In the day classes—Masters studying for extra certificate, 5*s.* ; chief mates studying for master, 5*s.* ; only mates studying for chief mates, 5*s.* ; second mates studying for chief mates, 5*s.* ; seamen studying for only mates, 5*s.*, for second mates, 5*s.* ; apprentices studying navigation, 2*s.* 6*d.* ; boys learning navigation, 2*s.* 6*d.* ; boys not learning navigation, 5*s.* per quarter. In the evening classes—Adults learning navigation, 2*s.* 6*d.* per week ; boys learning navigation, 6*d.* per week.

The attendance at the classes has been :—

Day classes	8 boys ; 15 adults.
Evening classes	5 boys ; 19 adults.

Receipts at the navigation school at Aberdeen from 9th January 1858 to 9th January 1859 have been as follows :—The fee receipts of adults are 130*l.* 17*s.* 6*d.* ; those of the boys, 2*l.* ; grand total of fees, 132*l.* 17*s.* 6*d.*

The annual inspection and public examination took place in September.

The amount of aid afforded to the school by the Department has been 20*l.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 62*l.* 5*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

GLASGOW.—(Population in 1851—329,097.)

Established in 1857. It is held in Sailors' Home Building.

The officers of the committee of management are :—

Chairman, William Ewing.
Secretary, Capt. R. Crawford.
Head-Master, John Newton, 3 certificates.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 105, showing a total

increase of 79 since last year. The total fees have been 47*l.* 3*s.* 6*d.*, showing an increase of 46*l.* 4*s.* 0*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are—Masters, 14; chief mates, 3; only mates, 4; second mates, 2; seamen, 37; apprentices, 11; boys and trade apprentices, 34; total number of students, 105.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificate, 6*s.*; chief mates studying for master, 6*s.*; only mates studying for chief mates, 6*s.*; second mates studying for chief mates, 6*s.*; seamen studying for only mates, 6*s.*; for second mates, 6*s.*; apprentices studying navigation, 6*d.*; those not studying navigation, 6*d.*; seamen not studying navigation, 1*s.*; boys learning navigation, 6*d.*; boys not learning navigation, 6*d.* In the evening classes—Adults learning navigation, 1*s.*; not learning navigation, 1*s.*; boys learning navigation, 6*d.*; not learning navigation, 6*d.*

The average attendance per day at the classes has been:—

Day classes	2·2 adults.
Evening classes	7·5 adults.

Receipts at the navigation school at Glasgow from 4th January to 31st December 1858, have been as follows:—The fee receipts of adults in the day classes are 35*l.* 2*s.* 0*d.*; those of adults and boys in the evening classes, 12*l.* 1*s.* 6*d.*; grand total of fees, 47*l.* 3*s.* 6*d.*

The amount of aid afforded to the school by the Department has been 140*l.* 16*s.* 3*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 49*l.* 2*s.* 10*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

HULL.—(Population in 1851—84,690.)

Established in 1785.

The officers of the committee of management are:—

Chairman, John Alder.
Secretary, Edward S. Wilson.
Head-Master, Zebedee Scaping, 3 certificates.
Assistant-Master, W. R. Salmon.
John Hodgson, Pupil-teacher.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 146, showing a total decrease of 4 since last year.

The number of boys who have gone to sea during the quarter is 3.

The attendance at the classes has been:—

Day classes	93·8 boys.

The school received 3 Department prizes of—1 sextant, and 2 books, besides 20 local prizes.

The annual inspection and public examination took place in September.

The amount of aid afforded to the school by the Department has been 80*l.* 4*s.* 0*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

Appendix I.

NAVIGATION SCHOOLS.

LEITH.—(Population in 1851—30,919.)

Established in 1855. It is held in one of the school-rooms adjoining Mariners' Church.

The officers of the committee of management are :—
Chairman, James Taylor, Provost of Leith.
Secretary, Rev. John Thomson.
Head-Master, S. K. Burchill.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 141, showing a total decrease of 56 since last year. The total fees have been 44*l.* 4*s.* 10½*d.*, showing a decrease of 11*l.* 18*s.* 7½*d.* from last year.

The entire number of adults and boys who have at any time paid fees during the year are—Masters, 2; chief mates, 4; only mates, 3; second mates, 15; seamen, 23; apprentices, 45; boys and trade apprentices, 49; total number of students, 141.

The number of boys who have gone to sea during the year is 7.

The following is the rate of fees paid by adults and boys per week :—In the day classes—Masters studying for extra certificate, 5*s.*; chief mates studying for master, 5*s.*; only mates studying for chief mates, 5*s.*; second mates studying for chief mates, 5*s.*; seamen studying for only mates, 5*s.*; for second mates, 5*s.*; apprentices studying navigation, 1*s.*; those not studying navigation, 1*s.*; masters and seamen studying navigation, 2*s.* 6*d.*; boys learning navigation, 10½*d.*; boys not learning navigation, 10½*d.* In the evening classes—Adults learning navigation, 1*s.* 6*d.*; not learning navigation, 1*s.* 6*d.*; boys learning navigation, 10½*d.*; not learning navigation, 10½*d.*

The attendance at the classes has been :—

Day-classes . . .	6·5 boys; 6·5 adults.
Evening-classes . .	8·5 boys and adults.

The school received 1 Department prize and 5 local prizes.

Receipts at the navigation school at Leith from 1st January to 31st December 1858 have been as follows :—The fee receipts of adults in the day classes are 18*l.* 4*s.* 9*d.*; those of the boys in the day classes, 17*l.* 16*s.* 4½*d.*; those of adults and boys in the evening classes, 8*l.* 5*s.* 9*d.*; grand total of fees, 44*l.* 4*s.* 10½*d.*

The annual inspection and public examination took place in September.

The amount of aid afforded to the school by the Department has been 77*l.* 3*s.* 4*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

LIVERPOOL.—(Population in 1851—375,955.)

Established in 1853. It is held in the Sailors' Home.

The officers of the committee of management are :—
Chairman, John A. Tinne.
Secretary, John T. Towson.
Head-Master, H. J. Smart.
Assistant-Masters, James Gill; George Adamson, 1 certificate.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 755, showing a total increase of 2 since last year. The total fees have been 347*l.* 9*s.* 0*d.*, showing an increase of 8*l.* 12*s.* 6*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are—Masters, 31; chief mates, 73; only mates, 49;

second mates, 104; seamen, 229; apprentices, 247; boys, 22; total number of students, 755.

The number of boys who have gone to sea during the year is 11.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificate, 6*s.*; chief mates studying for master, 6*s.*; only mates studying for chief mates, 6*s.*; second mates studying for chief mates, 6*s.*; seamen studying for only mates, 6*s.*; for second mates, 6*s.*; apprentices studying navigation, 3*s.*; boys learning navigation, 10½*d.* In the evening classes—Adults learning navigation, 1*s.*; not learning navigation, 6*d.*; boys learning navigation, 6*d.*; not learning navigation, 6*d.*

The attendance at the classes has been:—

Day classes . . .	6·5 boys; 18 adults.
Evening classes . .	18·5 boys and adults.

Receipts at the navigation school at Liverpool from 1st January 1857 to 31st December 1858, have been as follows:—The fee receipts of adults in the day classes are 287*l.* 17*s.*; those of the boys in the day classes 14*l.* 3*s.* 6*d.*; those of adults and boys in the evening classes 45*l.* 8*s.* 6*d.*; grand total of fees, 347*l.* 9*s.* 0*d.*

The amount of aid afforded to the school by the Department has been 152*l.* 18*s.* 3*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 114*l.* 15*s.* 8*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

NEWCASTLE-ON-TYNE.—(Population in 1851—80,000.)

Established in 1857. It is held in the school of the Trinity House.

The officers of the committee of management are:—

Chairman, James Gordon.
Secretary, John Currie.
Head-Master, W. H. Thorn, 1 certificate.
Assistant-Master, James Bolam.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 107, showing a total increase of 62 since last year. The total fees have been 65*l.* 12*s.* 3*d.* showing an increase of 53*l.* 18*s.* 3*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are:—Masters, 7; chief mates, 5; only mates, 4; second mates, 7; seamen, 4; apprentices, 10; boys and trade apprentices, 70; total number of students, 107.

The number of boys who have gone to sea during the quarter is 6.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificate, 7*s.* 6*d.*; chief mates studying for master, 5*s.*; only mates studying for chief mates, 5*s.*; second mates studying for chief mates; seamen studying for only mates, 5*s.*; for second mates, 2*s.* 6*d.*; apprentices studying navigation, 6*d.*; those not studying navigation, 6*d.*; seamen not studying navigation, 2*s.* 6*d.*; boys learning navigation, 6*d.*; boys not learning navigation, 6*d.*

The attendance at the classes has been:—

Day classes . . .	33·7 boys; 3·1 adults.

The school received one Department prize and five local prizes.

Receipts at the navigation school at Newcastle-on-Tyne, from 31st December 1857 to 31st December 1858, have been as follows:—The

Appendix I. NAVIGATION SCHOOLS.

fee receipts of adults in the day classes are 22*l.* 17*s.* 9*d.*; those of the boys in the day classes, 42*l.* 14*s.* 6*d.*: grand total of fees, 65*l.* 12*s.* 3*d.*

The annual inspection and public examination took place in September.

The amount of aid afforded to the school by the Department has been 20*l.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 9*l.* 2*s.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

POPLAR.

Established in 1856.

The officers of the committee of management are:—

Chairman, R. Green.
Secretary, Captain James Furnell.
Head-Master, William Stockton, 1 certificate.
Assistant-Masters, Richard Strachan, 4 certificates; Charles Swinstead.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 154, showing a total decrease of 28 since last year. The total fees have been 206*l.* 15*s.* 6*d.*, showing an increase of 8*l.* 9*s.* 6*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are:—Masters, 2; chief mates, 10; second mates, 8; third and fourth officers, 17; seamen, 19; apprentices, 4; midshipmen, 87; boys and trade apprentices, 7; total number of students, 154.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificate, 6*s.*; chief mates studying for master, 6*s.*; only mates studying for chief mates, 6*s.*; second mates studying for chief mates, 6*s.*; seamen studying for only mates, 6*s.*; for second mates, 6*s.*; apprentices studying navigation, 6*s.*; those not studying navigation, 6*s.*; seamen not studying navigation, 6*s.*; boys learning navigation, 6*s.*; boys not learning navigation, 6*s.* In the evening classes—Adults not learning navigation, 1*s.*; boys not learning navigation, 1*s.*

The attendance at the classes has been:—

Day classes . . .	8·73 adults.
Evening classes . . .	15·5 boys and adults.

The school received five Department prizes of drawings.

Receipts at the navigation school at Poplar, from 31st December 1857 to 31st December 1858, have been as follows:—The fee receipts of adults in the day classes are 152*l.* 11*s.*; those of adults and boys in the evening classes, 54*l.* 4*s.* 6*d.*; grand total of fees, 206*l.* 15*s.* 6*d.*

The amount of aid afforded to the school by the Department has been 54*l.* 5*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

SHADWELL.

Established in 1857. It is held in the lecture hall and class-room of the Sailors' Institute, Mercers Street.

The officers of the committee of management are:—

Secretary, Thomas Augustus Fieldwick.
Head-Master, Robert T. Nelson, 1 certificate.
Assistant-Masters, Joseph Boss, Jonas Ashton.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 250, showing a total increase

of 61 since last year. The total fees have been 101*l.* 4*s.*, showing an increase of 64*l.* 15*s.* 1*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are:—Masters, 1; chief mates, 7; only mates and second mates, 10; seamen, 47; apprentices, 27; boys, 158; total number of students, 250.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificates, 6; chief mates studying for master, 6*s.*; only mates studying for chief mates, 6*s.*; second mates studying for chief mates, 6*s.*; seamen studying for only mates, 6*s.*; for second mates, 6*s.*; apprentices studying navigation, 6*s.*; those not studying navigation, 6*d.*; seamen not studying navigation, 1*s.*; boys learning navigation, 6*d.*; boys not learning navigation, 6*d.* In the evening classes—Adults learning navigation, 1*s.*; not learning navigation, 1*s.*; boys learning navigation, 6*d.*; not learning navigation, 1*s.*

The attendance at the classes has been:—

Day classes . . .	68 boys.
Evening classes . . .	7·5 boys and adults.

The school received four Department prizes of 10*s.* each.

Receipts at the navigation school at Shadwell, from 1st January 1858 to 1st January 1859, have been as follows:—The fee receipts of the boys in the day classes, 72*l.* 3*s.*; those of adults and boys in the evening classes, 29*l.* 1*s.*: grand total of fees, 101*l.* 4*s.*

The amount of aid afforded to the school by the Department has been 181*l.* 6*s.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 96*l.* 11*s.* 9*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

SUNDERLAND.—(Population in 1851—67,394.)

Established in 1855. It is held in Lodge Terrace, Hendon, near South Docks.

The officers of the committee of management are:—
Chairman, the Mayor of Sunderland.
Secretary, Ralph Simey.
Head-Master, J. J. Stiles, 1 certificate.
Assistant-Master, H. J. Saunders, certificate.
John Duncan, the pupil-teacher.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 374, showing a total decrease of 7 since last year. The total fees has been 143*l.* 10*s.* 2*d.*, showing an increase of 41*l.* 5*s.* 8*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are:—Extra masters, 4; masters, 36; chief mates, 8; only mates, 94; second mates, 31; seamen, 8; apprentices, 34. Evening class:—carpenters, &c., 58; boys and trade apprentices, 101: total number of students, 374.

The number of boys who have gone to sea during the quarter is 16.

The following is the rate of fees paid by adults and boys per week:—In the day classes—Masters studying for extra certificate, 5*s.*; chief mates studying for master, 5*s.*; only mates studying for chief mates, 2*s.* 6*d.*; second mates studying for chief mates, 2*s.* 6*d.*; seamen studying for only mates, 2*s.* 6*d.*; for second mates, 2*s.* 6*d.*; boys learning navigation, 6*d.* In the evening classes—Adults learning navigation, 1*s.*; not learning navigation, 1*s.*; boys learning navigation, 6*d.*; not learning navigation, 6*d.*

Appendix I.

NAVIGATION SCHOOLS.

The attendance at the classes has been :—

Day classes . . .	45·4 boys; 14·6 adults.
Evening classes . . .	9·6 boys and adults.

The school received three Department prizes.

Receipts at the navigation school at Sunderland, from 1st January 1858 to 31st December 1858, have been as follows :—The fee receipts of adults in the day classes are 88*l.* 15*s.* 6*d.*; those of the boys in the day classes, 41*l.* 7*s.* 8*d.*; those of adults and boys in the evening classes, 13*l.* 17*s.*: grand total of fees, 143*l.* 10*s.* 2*d.*

The amount of aid afforded to the school by the Department has been 118*l.* 11*s.* 2*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 76*l.* 18*s.* 4*d.* on account of examples, besides the local expenses for rent, cleaning, firing, lighting, printing, &c.

WATERFORD.—(Population in 1851—29,288.)

Established in 1857. It is held in the Waterford District Model School.

The officers of the committee of management are :—

Head Inspector, Timothy Shachan.
Secretary, James M'Lochlin.
Head-Master, Denis M'Carthy, 1 certificate.
George Latchford and Michael Sullivans, the pupil-teachers.

The total number receiving instruction in navigation and mathematics in or through the agency of the school during 1858 has been 71, showing a total increase of 25 since last year. The total fees have been 32*l.* 4*s.* 3*d.* showing an increase of 12*l.* 12*s.* 10*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year are masters, 0; chief mates, 0; only mates, 1; second mates, 0; seamen, 24; apprentices, 9; adults who studied navigation, 2; boys and trade apprentices, 7; boys not studying navigation, 26; adults not studying navigation, 2; total number of students, 71.

The number of boys who have gone to sea during the year is 4.

The following is the rate of fees paid by adults and boys per week :—In the day classes—Masters studying for extra certificate, 1*s.* 3*d.*; chief mates studying for master, 1*s.* 3*d.*; only mates studying for chief mates, 1*s.* 3*d.*; seamen studying for only mates, 1*s.* 3*d.*; for second mates, 1*s.* 3*d.*; apprentices studying navigation, 1*s.* 3*d.*; those not studying navigation, 1*s.* 3*d.*; seamen not studying navigation, 1*s.* 3*d.*; boys learning navigation, 1*s.* 3*d.*; boys not learning navigation, 1*s.* 3*d.* In the evening class—Adults learning navigation, 1*s.* 3*d.*; not learning navigation, 1*s.* 3*d.*; boys learning navigation, 1*s.* 3*d.*; not learning navigation, 1*s.* 3*d.*

The attendance at the classes has been :—

Day classes . . .	6·43 boys; 4·25 adults.
Evening classes . .	6·03 boys and adults.

Receipts at the navigation school at Waterford, from 1st January 1858 to 31st December 1858, have been as follows :—The free receipts of adults in the day classes are 11*l.* 5*s.* 6½*d.*; those of the boys in the day classes, 12*l.* 1*s.* 4½*d.*; those of adults and boys in the evening classes, 8*l.* 17*s.* 4*d.*; grand total of fees, 32*l.* 4*s.* 3*d.*

The annual inspection and public examination took place in October.

The amount of aid afforded to the school by the Department has been 20*l.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

WELLS STREET.

Established in 1854. It is held in the Sailors' Home.

The officers of the committee of management are :—

Chairman, Admiral Sir H. Hope.
Secretary, Captain George Pierce, R.N.
Head-Master, John Bowing, 1 certificate.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 149, showing a total increase of 25 since last year. The total fees have been 46*l.* 15*s.* 6*d.*

The entire number of adults and boys who have at any time paid fees during the year are, masters, 3; chief mates, 17; only mates, 2; second mates, 37; seamen, 62; apprentices, 28; total number of students, 149.

The following is the rate of fees paid by adults and boys per week :— In the day classes—Masters studying for extra certificates, 6*s.*; chief mates studying for master, 6*s.*; only mates studying for chief mates, 6*s.*; second mates studying for chief mates, 6*s.*; seamen studying for only mates, 6*s.*; for second mates, 6*s.*; apprentices studying navigation, 6*s.*; those not studying navigation, 1*s.*; seamen not studying navigation, 1*s.*; boys learning navigation, 6*d.*; boys not learning navigation, 6*d.* In the evening classes—Adults learning navigation, 3*s.*; not learning navigation, 1*s.*; boys learning navigation, 3*s.*; not learning navigation, 6*d.*

The average attendance at the classes has been :—

Day classes . . . morning, 7; afternoon, 6.
Evening classes . . . . . 6.

Grand total of fees, 46*l.* 15*s.* 6*d.*

The amount of aid afforded to the school by the Department has been 43*l.* 16*s.* 4*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

YARMOUTH (GREAT).—(Population in 1851—30,879.)

This school of navigation was established in 1857. It is held in a house on the South Quay.

The officers of the committee of management are :—

Chairman, The Mayor.
Secretaries, Mathew Butcher, John B. Bampton.
Head-Master, J. R. Jones, 1 certificate.

The total number receiving instruction in navigation in or through the agency of the school during 1858 has been 130, showing a total increase of 85 since last year. The total fees have been 41*l.* 1*s.*, showing an increase of 27*l.* 17*s.* 6*d.* over last year.

The entire number of adults and boys who have at any time paid fees during the year, are masters, 1; chief mates, 4; only mates, 5; second mates, 25; seamen, 19; apprentices, 4; boys and trade apprentices, 72; total number of students, 130.

The number of boys who have gone to sea during the year is 20.

The following is the rate of fees paid by adults and boys per week :— In the day classes—Masters studying for extra certificate, 5*s.*; chief mates studying for masters, 5*s.*; only mates studying for chief mates, 5*s.*; second mates studying for chief mates, 5*s.*; seamen studying for only mates, 3*s.*; for second mates, 3*s.*; apprentices studying navigation, 3*s.*; boys learning navigation, 6*d.*; boys not learning navigation, 6*d.* In the evening classes—Adults learning navigation, 1*s.*; not learning navigation, 1*s.*; boys learning navigation, 1*s.*; not learning navigation, 6*d.*

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The attendance at the classes has been:—

Day classes . . .	11·1 boys; 3·15 adults.
Evening classes . . .	4·6 boys and adults.

The school received one Department prize of a book and three local prizes.

Receipts at the navigation school at Great Yarmouth from 1st January 1858 to 31st December 1858, have been as follows:—The fee receipts of adults in the day classes are 21*l.* 11*s.*; those of the boys in the day classes, 12*l.* 8*s.*; those of adults and boys in the evening classes, 7*l.* 2*s.*; grand total of fees, 41*l.* 1*s.*

The annual inspection and public examination took place in October.

The amount of aid afforded to the school by the Department has been 17*6l.* 7*s.* 2*d.*, which sum includes the payments for the master's certificate and other allowances, the payments to pupil-teacher, the cost of medals, &c.

The school has expended from its own funds 45*l.* 6*s.* 8*d.* on account of examples besides the local expenses for rent, cleaning, firing, lighting printing, &c.

APPENDIX K.

Report by the Board of Manufactures upon the School of Art, Edinburgh, under their Charge.

Board of Manufactures, Royal Institution,
Edinburgh, 6th April 1859.

Sir,

By a Treasury Minute, dated 25th February 1858, the school at Edinburgh under charge of the Board of Manufactures, which had subsisted for a long period of years as a separate school of design, was affiliated to the Department of Science and Art with a view to its being organized and conducted upon the same system as the other schools of art in the kingdom, remaining, however, under the immediate charge of the Board, as before. By the Treasury Minute, the funds of the Board were relieved in future from the cost of the school, and were appointed to be applied to the maintenance of the following public establishments in Edinburgh, viz :—

The National Gallery of Scotland,
The Royal Institution, and
The Museum of the Society of Antiquaries.

As the Minute withdrew from other institutions grants which till then had been paid to them by Treasury authority, out of the funds of the Board, and introduced several new arrangements in respect to the financial position of the school, its provisions could not at once be carried into effect, and the month of September had arrived before, in communication with the Treasury, these could be finally adjusted and disposed of.

The school of art had to be opened by the 1st of October, and, therefore, but a very few weeks were left within which to accomplish the new organization of the school.

Although the Board were aided in this service by your own personal presence, and very able and experienced co-operation, the school arrangements could not be so matured as to be advertised or in any way made known until long after all the schools and educational establishments of the city and its neighbourhood, as well as most private families, had entered into their ordinary engagements for the year of instruction 1858–9; and in consequence, the school of art found itself cut out from a free and unoccupied field, and from the opportunity of preferential selection which it may expect in future seasons. Nevertheless, against such difficulties and disadvantages, it has quietly and

Appendix K.

School of Art, Edinburgh.

successfully made its own way, and promises to become a school of great extent and influence. As a school of design, it had always a high reputation, and was known to possess peculiar and valuable resources for study, in the extensive gallery of casts from the antique, and collections of works of art which belonged to the Board. These have all been retained intact, accessible to the students in the several classes, while also there have been now added the systematized sets of examples prepared by the Department of Science and Art; together with other studies belonging to the Department, specially selected for the school. Such resources, with the accession of the National Gallery as a school for painting, cannot fail to recommend the Board of Manufactures School of Art as possessing the chief requirements of a metropolitan school, and will continue to attract to it as heretofore, but probably in greater numbers, students desirous of perfecting their art education.

The report now presented is unavoidably of so intermediate and transient a character, that it can give but a very slight view of the condition and prospects of the school, which, too, has not yet been brought under inspection, nor partaken of actual competition and classification with other schools of the empire. Its faculties and energies have yet to be touched with this great stimulus to advancement, and have to be roused by it to a consciousness of the privileges and distinction which the school, by exertions on its own part, and by merit, may obtain.

The numbers that have been brought under instruction to this date are as follows :—

At the central school, in the autumn and winter session ended February 28th, there were entered,—

Males - - - -	229
Females - - -	151
Total - - -	380

In the spring and summer session, commenced March 1st, of which but little more than a month has yet run, there have been entered :—

Males - - -	185
Females - - -	182
Total - - -	367

Besides these, the following outside schools have been opened, which are attended by the numbers tabled against each.

OUTSIDE SCHOOLS.

Name.	Males.	Females.	Total.
Dr. Thomson's school, Queensferry-street -	62	22	*84
* Besides the above number taught under the direct superintendence of Mr. Morley, the certificated art-master, there are upwards of 400 boys and girls at other times taught by the pupil-teachers, who receive their instruction from Mr. Morley.			
Dr. Bell's school, Niddry-street - -	220	146	366
Orphan Hospital, Dean - - -	37	18	†55
† In the same way as above, there are other 43 boys and girls taught by the governor, under Mr. Morley's instructions.			
Free Church school, Holyrood - -	42	18	‡60
‡ Here also there are 130 others receiving instruction from pupil-teachers, as above described.			
Free Church training college, Moray House -	—	82	82
„ common school, „ -	50	138	188
Deaf and Dumb Institution, Henderson-row -	31	27	58
Northern District school, „ „ -	39	39	78
Episcopal training school, Minto House -	28	—	28
Total - - - - -	509	490	999

It thus appears that at the outside schools 999 students are under the direct instruction of the certificated art-master or mistress; and 573 others obtaining collateral instruction on the same principle; forming a total of 1,572 students brought under the system of the Department of Science and Art in six months from its first introduction.

So long as the school was a school of design, it had not taken up outside teaching at all, and was confined to a central school.

Till the year 1856, the admission to the central school was gratis, but fees were then adopted.

Upon an average of the whole school, the rate of fees now are about the same as the rate of fees exacted during 1856 and 1857 (its two years' fee period as a school of design), although there are at present some classes at much higher rates of fees than were ever exacted then.

The numbers entered in the central school in 1856 were :—

Males - - -	162
Females - - -	99
Total - - -	261

In 1857 :—

Males - - -	182
Females - - -	127
Total - - -	309

Appendix K.

School of Art, Edinburgh.

These numbers are exclusive of re-entrants; that is, of students who, in the course of the year, entered for more than one session, the same student being only counted once.

Adopting a like principle of enumeration, and applying it to the central school for 1858 (organized then as a school of art) it will be seen that in its first session it exceeded the numbers entered in the school of design the previous year by 71; the comparative numbers being:—

In 1857 - - -	309 students.
In 1858 - - -	380 „
Difference in favour of 1858 -	71

And in comparison with the year before that, it exceeded the number by 119: the relative numbers being:—

In 1856 - - -	261 students.
In 1858 - - -	380 „
Difference in favour of 1858 -	119 „

while in the last-named year there are 1,572 out students under instruction against "nil" in the other cited years.

The Board refrain from any allusion to the services of the masters of the several departments of the school until the students' works in progress be exhibited; but they cannot pass by in silence the valuable assistance received previous to the opening of the school from Miss Ashworth, the certificated art-mistress sent from the Department of Science and Art. Constrained to leave London at a moment's notice, at some personal inconvenience, and arriving in Edinburgh an entire stranger, she addressed herself to the work of forwarding the interests of the school with a zeal and energy, and an obliging readiness to apply her experience wherever it could be useful, that call for special recognition in this Report, and which the Board are glad to have the present opportunity of publicly acknowledging.

I have the honour to be, &c.
B. F. Primrose, Secretary.

Henry Cole, Esq., C.B., Secretary,
Department of Science and Art, London.

APPENDIX L.

Nominal List of Art Students certificated in the Year 1858.

List of Students who obtained Certificates of the Third Grade for Masterships in Schools of Art :—

July 1858.

Group I.

Anne Johnson.
James Birkmyer.
Mary Rees.
Andrew Stevenson.
Clara Matiaux.
Maria Edwards.
Samuel F. Mills.
Ebenezer S. Burchett.
Isabel Sawkins.
William Wrigley.
John Edward.
Samuel Gallimore.

Group II.

Mary E. Channon.
Catherine Baines.

Group III.

R. Harley.

Group IV.

No certificate issued.

Group V.

S. E. Veal.
W. A. Morley.

Group VI.—*Mechanical.*

John Edward.
James Birkmyer.
Andrew Stevenson.
William C. Way.
William Wrigley.
Samuel Elton.

Group VI.—*Architectural.*

John Griffiths.

List of Students who obtained Certificates of the Third Grade for Masterships in Schools of Art :—

February 1859.

Group I.

Janet Inskipp.
John Anderson.
Mary Julyan.
M. A. Freed.
Alfred Hone.
John Samuel Rowle.
Francis R. Robjohns.
Henry W. Wright.
James Ford.

Group II.

Charles M. Clarke.
John Sparkes.
Robert Cochrane.
James Carter.
William S. Cosbie.

Group III.

No certificate issued.

Group IV.

John Griffiths.
Lionel Legge.
Alfred Howe.

Group V.

No certificate issued.

Group VI.—*Mechanical.*

S. F. Mills.
John Kemp.
James Miller.
James Ford.
Raymond Tucker.
John Hill.
Francis R. Robjohns.
Edward Blizard.
Charles J. Sturtevant (Assistant Master at Birmingham).
James A. Davis.

Group VI.—*Architectural.*

John Hill.

Appendix M.

RETURN OF EXPENDITURE.

APPENDIX M.

A STATEMENT of the EXPENDITURE of the several DIVISIONS of the DEPARTMENT OF SCIENCE AND ART, for the Period from 1st April 1858 to 31st March 1859.

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
	General management	3,614	18	4
1	Salaries and aid to masters, &c.	15,403	9	2
2	Examples, diagrams for science and art, &c.	12,537	5	10
3	Purchasing books for circulating library	978	1	6
4	Guarantee fund	548	15	6
5	Prizes of instruments, &c.	1,984	10	2
6	Salaries for inspection	2,584	14	0
7	Travelling expenses	1,843	7	4
8	South Kensington Museum	2,350	0	6
9	Collections at South Kensington of educational apparatus, &c.	444	15	8
10	Expenses of collecting and exhibiting articles of manufacture, &c.	492	5	5
11	Labour of attendants and artizans	2,960	5	1
12	Watching and lighting fires	2,374	15	5
13	Police	407	18	6
14	Works and repairs	5,690	11	7
15	Keeping grounds in order	198	2	11
16	Advertisements, labelling objects, &c.	783	17	10
17	Illustration of catalogues, &c.	89	13	8
18	Photographic apparatus	369	16	6
19	Incidents, extra copying, &c.	410	3	9
	£	56,067	8	8

AT JERMYN STREET.

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
1	Salaries	3,897	6	11
2	Purchase of specimens for Museum, &c.	904	14	9
3	Purchase and construction of mining models	228	1	4
4	Purchase of mining records	92	5	8
5	Outfit, &c. of lectures	202	14	6
6	Laboratories	99	16	7
7	Police attendance	56	0	0
8	Advertisements and printing	250	0	0
9	Travelling expenses	100	0	0
10	Prizes	55	0	0
11	Incidents	300	15	11
	£	6,186	15	8

GEOLOGICAL SURVEYS ("GREAT BRITAIN AND IRELAND.")

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
1	Salaries	6,716	0	6
2	Travelling expenses	1,197	5	2
3	Incidents	269	19	1
	£	8,183	4	9

INDUSTRIAL MUSEUM, SCOTLAND.

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
1	Salaries	763	16	0
2	Purchase of specimens for Museum, &c.	698	1	3
3	Ordinary repairs, fittings, &c.	198	15	11
4	Fuel and light, cleaning, &c.	119	12	0
5	Advertisements	18	0	3
6	Travelling expenses	29	4	8
7	Incidents	94	11	11
	£	1,922	2	0

ROYAL DUBLIN SOCIETY.

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
1	General objects of the Society	6,049	19	0
	£	6,049	19	0

MUSEUM OF IRISH INDUSTRY.

Item No.	Heads of Service.	Total Expenditure. £	s.	d.
1	Salaries	2,101	0	0
2	Provincial lecturers	500	0	0
3	Purchase of specimens for Museum, &c.	499	14	7
4	Outfit, &c. of lectures	298	0	6
5	Prizes	46	0	0
7	Rent, rates, and taxes	236	1	0
7	Repairs, furniture, fittings, &c.	550	7	1
8	Laboratories	97	1	6
9	Fuel and light, cleaning, &c.	197	16	9
10	Uniforms for attendants	62	8	0
11	Advertisements and printing	99	13	0
12	Travelling expenses	45	13	4
13	Incidents	98	16	9
	£	4,832	12	6

Appendix M.

RETURN OF EXPENDITURE.

SUMMARY.

Item No.	Establishments.	Total Expenditure. £	s.	d.
—	Department of Science and Art, South Kensington, including General management	56,067	8	8
—	Museum of Practical Geology, Jermyn Street	6,186	15	8
—	Geological Survey of the United Kingdom	8,183	4	9
—	Industrial Museum, Scotland	1,922	2	0
—	Royal Dublin Society	6,049	19	0
—	Museum of Irish Industry	4,832	12	6
	£	83,242	2	7

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.